DOMESTIC AND INTERNATIONAL

RX-20 / CMX-20
Owner's Manual

HydraMaster North America, Inc.
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RX-20 / CMX-20

1- Introduction

***Congratulations**,*

You now own a piece of equipment that incorporates the latest in carpet, tile and grout cleaning technology. Your foresight in purchasing an RX-20 / CMX-20 shows that you care enough to give your customer the maximum cleaning process available. You have invested in not only a cleaning tool, but a marketing tool that will enhance your professional image in every way.

The RX-20 and the CMX-20 are basically the same machine, with different names and labels. HydraMaster truckmount owners know this tool as the RX-20 whereas CleanMaster portable owners know it as the CMX-20.

The RX-20 / CMX-20's features will almost certainly increase your productivity while decreasing the fatigue factor that may have prevented you from going after some of the larger cleaning jobs that are available to carpet cleaners and maintenance professionals today.

Your new RX-20 / CMX-20 is a powerful Rotary Jet Extractor that has been precision engineered to bring you to the state-of-the-art in carpet, tile and grout cleaning. The RX-20 / CMX-20's weight distribution and rotary motion enable the operator to maneuver the unit easily with less fatigue and without back strain.

The RX-20 / CMX-20's electric motor drives its precision transmission which, in turn, rotates the head, or star, assembly.

Cleaning solution is injected through the center of the gear box shaft directly to the three spray jets.

Soiled solution is then extracted from the carpet by five stainless steel cleaning heads and drawn through the aluminum exhaust manifold to your cleaning system's recovery tank.

CONTACT INFORMATION

If you have any questions regarding the operation, maintenance or repair of this machine, please contact your local distributor.

To find a local distributor, please visit the HydraMaster website at http://www.hydramaster.com/owners/locate/index.asp.

If your question cannot be resolved by your distributor or by the information within this manual, you may contact HydraMaster Customer Service direct using the following phone numbers.

Hours	Telephone Numbers	E-mail Addresses
Monday-Friday	(425) 775-7275 Service	Tech Support: techsupport@hydramaster.com
7:00 a.m. to 5:00 p.m.	(425) 775-7276 Parts	Parts Support: parts@hydramaster.com
Pacific Standard Time	(800) 426-4225 Parts / Service FAX	

When calling your distributor, be sure to reference the serial number and date of purchase.

FOR YOUR REFERENCE:

Serial No._____

Date of Purchase:_____

Purchased From (Distributor): _____

WARNINGS, CAUTIONS AND NOTICES

⚠WARNING

HydraMaster uses this WARNING symbol throughout the manual to warn of possible injury or death.

CAUTION

This CAUTION symbol is used to warn of possible equipment damage.

NOTICE

This NOTICE symbol indicates that federal or state regulatory laws may apply, and also emphasizes supplemental information.

RX-20 / CMX-20

2- Machine Specifications

	RX-20 / CMX-20 - 110 V	RX-20 / CMX-20 - 220 V	
Length	23”	23”	
Base Width	16”	16”	
Height - Standard	Up to 43”	Up to 43”	
Height - with Extended Handle	Up to 49”	Up to 49”	
Weight	70 lbs	70 lbs	
Motor	1/2 HP Totally Enclosed Fan-Cooled	1/2 HP Totally Enclosed, Fan-Cooled	
Voltage	110 V, 60 Hz	220 V, 50 Hz or 60 Hz	
Gear Box	1,725 rpm Input 130 rpm Output Permanently Lubricated Helical Gear Drive	**220V, 50 Hz**	**220V, 60 Hz**
		1,450 rpm Input 109 rpm Output Permanently Lubricated Helical Gear Drive	1,725 rpm Input 130 rpm Output Permanently Lubricated Helical Gear Drive
Oil Capacity	12 oz	12 oz	
Star Head Plate	Replaceable, Spring Steel Arms	Replaceable, Spring Steel Arms	
Cleaning Heads	Five Cast Aluminum	Five Cast Aluminum	
Solution Jets	Three Stainless Steel, 80015 Veejet 80	Three Stainless Steel, 80015 Veejet 80	
Solution Strainer	Mesh, Stainless	Mesh, Stainless	
Solution Valve	Stainless Steel, High Pressure	Stainless Steel, High Pressure	
Cleaning Rate	Five Heads Rotating at 130 rpm = 650 Cleaning Passes/Minute	**220V, 50 Hz**	**220V, 60 Hz**
		Five Heads Rotating at 109 rpm = 545 Cleaning Passes/Minute	Five Heads Rotating at 130 rpm = 650 Cleaning Passes/Minute

RX-20 / CMX-20

	RX-20 / CMX-20 - 110 V	RX-20 / CMX-20 - 220 V
Handle Assembly*	Foam Grips, Adjustable Height	Foam Grips, Adjustable Height
Transportation Wheels	8” diameter, 1-1/2” Wide; Grey, Non-Marking	8” diameter, 1-1/2” Wide; Grey, Non-Marking
Electric Cord	50 ft, 14/3	50 ft w/M-F IEC Ends 220 V

The base, exhaust manifolds, handle, gear box housing and cleaning heads are all cast aluminum. Other parts are either metal or high impact plastic.

NOTICE

The operating temperature and pressure of the cleaning solution as well as the vacuum power depend entirely on the type of cleaning system you use.

CONFIGURATIONS

When selecting your high efficiency rotary extractor machine, you have several models from which to choose:

If you want this configuration:	Order this P/N:
RX-20 - 110 V	700-041-006
RX-20 - 110 V, Extended Handle *	700-041-106
RX-20 - 220 V	700-041-007
RX-20 - 220 V, Extended Handle *	700-041-107
CMX-20 - 110 V	700-041-008
CMX-20 - 110 V, Extended Handle *	700-041-108
CMX-20 - 220 V	700-041-009
CMX-20 - 220 V, Extended Handle *	700-041-109

RX-20 and CMX-20 units are also available in these electrical configurations:

- 110 V - 60 Hz
- 220 V - 50 Hz
- 220 V - 60 Hz

See Table 8-1 for detailed parts lists for all eight configurations.

* To accommodate operator comfort, HydraMaster designed the Extended Handle configurations which increase overall length of the handle by 6”.

OPTIONAL EQUIPMENT

To better meet your business needs, HydraMaster offers these options that you can add to your basic rotary extractor system:

If you want this option:	Order this P/N:
Pad and Bonnet Driver	190-041-020 (Top Photo, Figure 2-1)
Hard Floor Attachment (LD)	190-041-024 (Middle Photo, Figure 2-1)
Hard Floor Attachment (MD)	190-041-026 (Middle Photo, Figure 2-1)
Hard Floor Attachment (HD)	190-041-025 (Middle Photo, Figure 2-1)
Mounting Bracket	000-163-018 (Bottom Photo, Figure 2-1)

RX-20 Pad and Bonnet Driver
Allows the RX-20 to quickly convert to drive either carpet cleaning bonnets or standard hard floor pads
Item#190-041-020

RX-20 Hard Floor Attachment - LD
Suitable for Light Duty (LD) to medium duty cleaning of stone, slate, terrazzo, ceramic tile, grout and sealed concrete floors
Item#190-041-024

RX-20 Hard Floor Attachment –MD
Suitable for Medium Duty (MD) to aggressive scrubbing of resilient floors, terrazzo, quarry tile, ceramic tile, grout and concrete floors
Item#190-041-026

RX-20 Hard Floor Attachment – HD
Designed for Heavy Duty (HD) to most aggressive scrubbing of resilient floors, terrazzo, quarry tile and concrete floors.
Item#190-041-025

RX Mounting Bracket
Keep your RX-20 High Efficiency Model secured in your van with our custom mounting brackets. Simply set the wheels of the extractor in the bracket and your machine will stay in place. No thinking about it rolling around in your van or wasting valuable space by laying it on its side.
Item#163-018

Figure 2-1. RX-20 / CMX-20 Optional Equipment

RX-20 / CMX-20

3 - Assembly Instructions

To prepare your RX-20 / CMX-20 for use, follow these instructions:

1. Remove the machine from the packaging. Inspect the machine carefully for any damage that may have occurred during shipping.
2. Remove the solid shipping plug from the top of the gear box (see Figure 3-1).
3. Check the gear box lubricant level (see page 6-4 of this Owner's Manual).
4. Insert the vented plug (provided) into the gear box in place of the solid shipping plug. The solid shipping plug may be discarded.
5. Remove the protective wrapping material from the wheels.
6. Attach the cleaning head, or star, assembly to the base of the RX-20 / CMX-20 (see Figure 3-1).
   a. Lean the machine back and rest it on the handle.
   b. Thread the star assembly (cleaning head) onto the exposed shaft in a counterclockwise direction.

CAUTION

Be sure to remove the solid shipping plug from the top of the gear box and replace it with the vented plug provided before operating the machine (see Figure 3-1). Failure to follow these directions may result in damage to the gear box and seal.

Your RX-20 / CMX-20 is now ready to operate.

Figure 3-1. Fully Assembled RX-20 / CMX-20

RX-20 / CMX-20

4 - Operating Instructions

PREPARATION

Handle Adjustment

Pull or push on the adjustment lever to adjust the height of the handles (see Figure 4-1). Several adjustments may be needed before a desirable operating position is found.

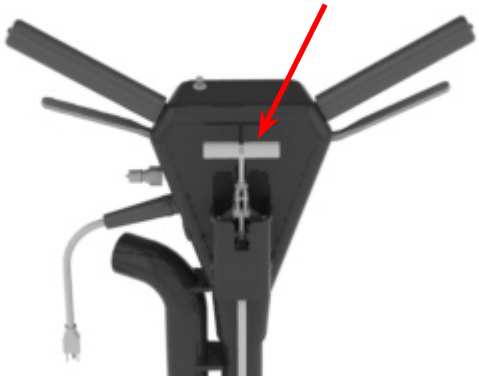


Figure 4-1. Pull or Push on Adjustment Lever

NOTICE

Most operators have better control and less fatigue when the handle is in a lower position, at the operator's hip line. For each person, there is an ideal position which ensures the RX-20 / CMX-20 does the work instead of the individual.

Solution and Vacuum Hose Connections

Your RX-20 / CMX-20 is equipped with a 440 male quick connect for the solution hose connection and a 2" O.D. vacuum hose inlet (see Figure 4-2). The vacuum inlet requires a 2" I.D. vacuum hose for proper air flow with a truckmounted system.

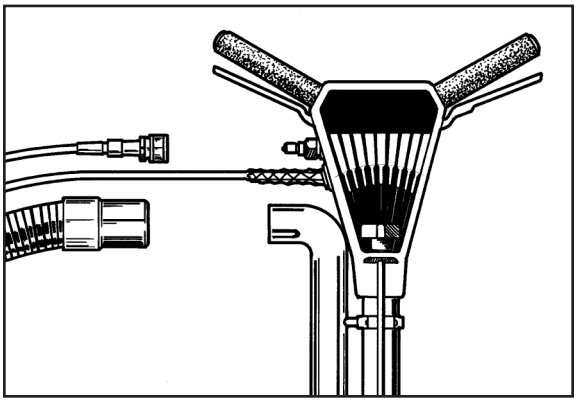


Figure 4-2. Location of 440 Male Quick Connect

NOTICE

The vacuum hose must be in good condition to ensure maximum airflow.

A solution hose with a 440 female quick connect is also required. If you do not have a 440 female quick connect, order it from your distributor.

To find a local distributor, please visit the HydraMaster website at
http://www.hydramaster.com/owners/locate/index.asp.
or the CleanMaster website at:
http://cleanmaster.com/reps/.

Electrical Cord Connection

The 50 ft electrical cord on your RX-20 / CMX-20 (110 V/60 Hz configuration) is a permanently attached, three-prong grounded line requiring a three-prong, 15 Amp receptacle.

A three-prong to two-prong adapter may be used if its ground wire is properly attached to a grounded terminal.

⚠WARNING

Do not, under any circumstances, remove the ground prong from your RX-20 / CMX-20 power cord. Serious injury or death may result.

For best results, vacuum the carpet thoroughly prior to using the carpet cleaning system.

OPERATION

Control Functions

Control triggers are located on each side of the handle under the rubber hand grips (see Figure 4-3).

1. To operate the RX-20 / CMX-20, squeeze the **motor trigger** on your right-hand side to control the electric motor which drives the cleaning heads (see Figure 4-3).

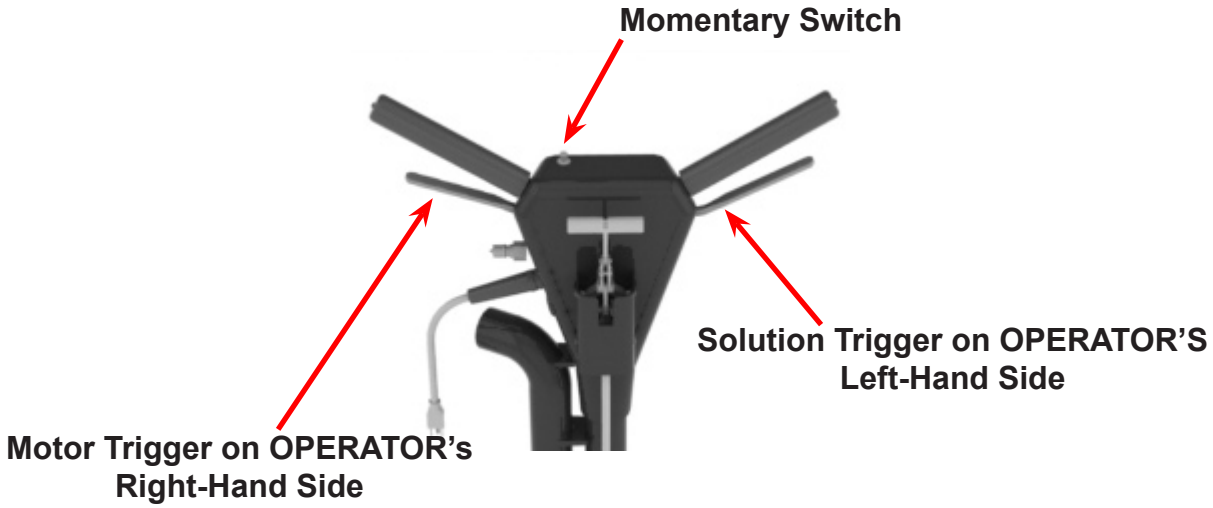


Figure 4-3. Location of Control Triggers and Momentary Switch as Viewed from Front of Machine (Opposite of Operator's Position)

2. To fully engage the motor as you are cleaning, you also need to hold down the momentary switch, or button, at the same time you as you squeeze the motor trigger (see Figure 4-3). The momentary switch is an integrated safety feature on the RX-20 / CMX-20 which cuts power to the machine if the operator's hands leave the machine for any reason.

3. On the left-hand side, squeeze the solution trigger to control the high pressure solution spray (see Figure 4-3).

Notice that the air flows constantly while the RX-20 / CMX-20 is in operation.

CAUTION

Do not operate your RX-20 / CMX-20 on dry carpets The friction generated by the revolving cleaning heads may damage fibers in the carpet.

Maneuvering Your RX-20 / CMX-20

Your RX-20 / CMX-20 maneuvers like a rotary floor machine.

1. To move the RX-20 / CMX-20 to the right, lift the handle slightly (see Figure 4-4). The more you lift or lower the handle, the faster the RX-20 / CMX-20 will move.

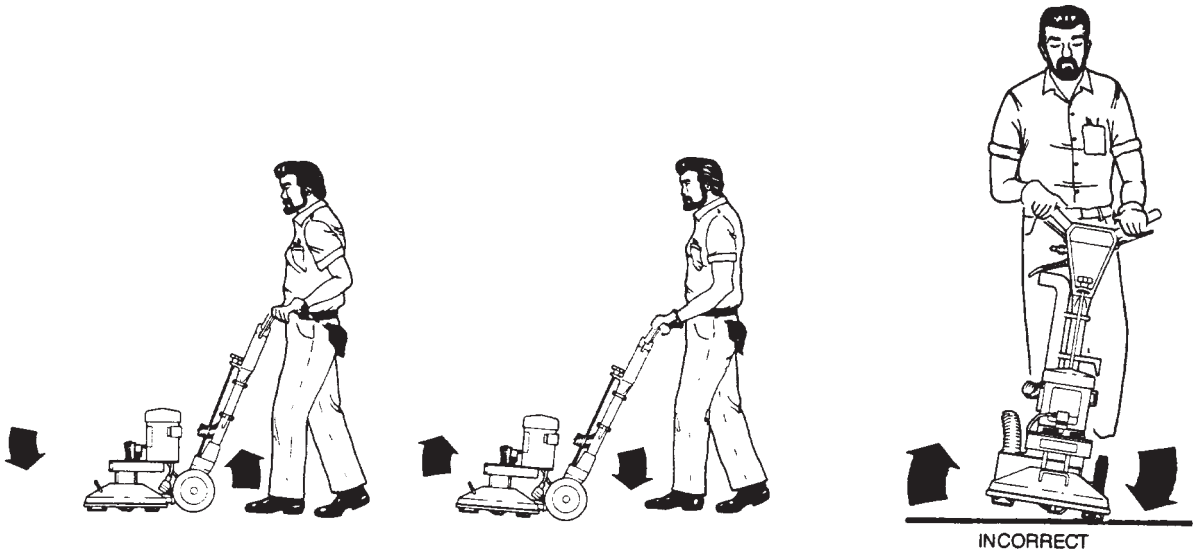


Figure 4-4. Lift or Lower Handle to Maneuver; Illustration to the Right Shows Incorrect Maneuver

2. To move forward and backward, position the handle so that the unit remains stationary, then push forward or pull back. To familiarize yourself with your RX-20 / CMX-20, practice on an open area. Depress both the solution trigger and motor trigger and move the RX-20 / CMX-20 slowly in a 3 to 5-ft arc, as shown in Figure 4-5.

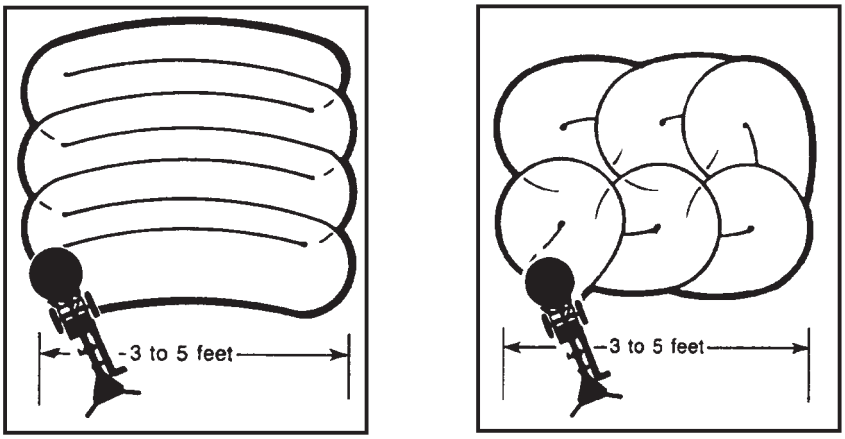


Figure 4-5. Correct Cleaning Patterns

After you have become familiar with the speed and movement of the machine, practice making it hover in one spot. (The hovering maneuver is useful for removing stubborn stains, as well as removing furniture indentions.)

CAUTION

Do not tilt RX-20 / CMX-20 sideways while moving forward and backward. A loss of control may result in damage to the unit or cleaning area.

5 - Cleaning Information

CLEANING PATTERNS

For regular carpet cleaning use an overlapping arc pattern three times over the same area (two passes with solution and one pass for drying). When cleaning carpets, first clean in circular pattern, then use the overlapping arc pattern to dry the area.

NOTICE

Dirtiest areas may require two or more cleaning passes. Using either pattern shown in Figure 4-5, you should develop a comfortable rhythm. To obtain maximum performance from your RX-20 / CMX-20, move it slowly and deliberately with a 50% overlap, giving it time to clean and extract. A steady pace rather than a frenzied one will increase efficiency and production, and decrease fatigue.

CAUTION

The following cautions should be observed while cleaning:

1. DO NOT operate your RX-20 / CMX-20 over metal floor moldings. Damage to both the molding and the cleaning head will result.

2. DO NOT operate your RX-20 / CMX-20 on hardwood floors.

3. DO NOT operate your RX-20 / CMX-20 over loose or unraveled carpet seams. The cleaning head may catch and cause further damage.

4. DO NOT operate your RX-20 / CMX-20 on concrete floors. It will develop sharp edges on the extraction heads that will damage carpet fibers.

5. DO NOT clean over the edge of a loose carpet. Instead, clean only up to the edge. Damage may occur if the extraction heads catch the loose carpet.

RX-20 / CMX-20

SPECIAL INFORMATION

When you clean some plush carpets, you may notice a “pilling” effect. (Pilling occurs when fluffy particles appear on carpet surfaces; it is caused by fibers that loosen because of a weak twist or snags.)

With an RX-20 / CMX-20, loose yarns form balls and are kicked aside as the cleaning heads revolve. This is normal when aggressive cleaning or even normal vacuuming takes place, as evidenced by a number of dead, loose yarns in the vacuum cleaner bag. These loose yarns, in most cases, are short staple yarns or filler yarns used to give the carpet a denser appearance.

Because your RX-20 / CMX-20 weighs approximately 70 lbs and rests on five 4” cleaning heads, the yarns are not sucked up into the vacuum heads as they are with a vacuum cleaner or old-style cleaning wand.

CAUTION

On older, rubber backed, glued down carpets that may be delaminating with age, the RX-20 / CMX-20 may cause further delamination. When in doubt, DO NOT use your RX-20 / CMX-20 on such carpets.

CLEANING HINTS

1. Most cleaners customarily clean their way out of an area or room. With the RX-20 / CMX-20, you can clean into an area or room, as shown in the Figure 5-1, so that the hoses are dragged behind you during the cleaning process rather than kicked out of the way as you back out of an area. The “cleaning into” method works especially well in hallways or confined areas.
2. The RX-20 / CMX-20 is a very aggressive carpet cleaning power head and will leave the carpet with a freshly cleaned appearance. The carpet should be brushed or groomed after the cleaning process to remove any swirl marks left behind.
3. The RX-20 / CMX-20 has been very successful in restoring badly matted traffic lanes in front of doorways and sofas. Even pivot areas can be brought back to life again, in most cases. “Cornrowing” in hallways can also be eliminated with minimal effort.

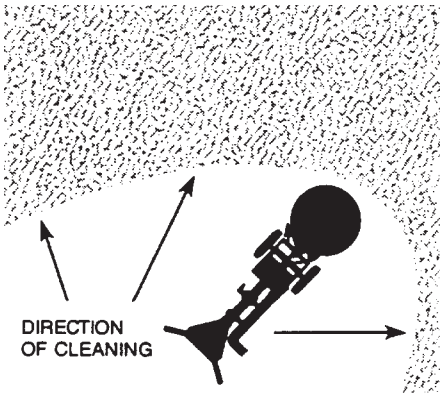


Figure 5-1. Clean into Area or Room

6 - Machine Maintenance

Good care and regular maintenance of your RX-20 / CMX-20 will result in a long, dependable life for the unit. Keep in mind that your RX-20 / CMX-20 will be in full view of your customer. An RX-20 / CMX-20 that is dirty and unkempt in appearance can cause your business or professional image to suffer. You are offering your customer the latest in cleaning technology. Therefore, it is important that your company image reflect your desire to give your customer the best.

The surface finish on your RX-20 / CMX-20 is a durable, powder coating and is easily cleaned with a damp cloth. To further protect the finish, a light coat of good silicon base polish should be applied periodically.

Lubrication and maintenance play a key role in the life of your RX-20 / CMX-20. Hence, the following daily and periodic maintenance steps must be followed. Train yourself to maintain your unit on a regular schedule until it becomes habitual.

DAILY MAINTENANCE

1. Disconnect the RX-20 / CMX-20 from the power source and inspect its power cord for cuts, breaks and abrasions. Repair or replace as needed.
2. Inspect the vacuum hoses for breaks or tears. Repair or replace as necessary.
3. Visually inspect your RX-20 / CMX-20 for water leaks, wear damage to the cleaning heads, and so forth. Repair or replace as necessary.
4. Remove the inline solution filter screen by unfastening the nut showing through the cut out on the back panel using a 15/16” wrench. Remove the nut which houses the inline filter (see Figure 6-1).
5. Rinse it under water to remove debris. If necessary, use a toothbrush to remove stubborn particles.
6. Before re-inserting the nut/inline filter, check the O-ring on the inside of the nut/inline filter. If the O-ring is cracked or damaged, replace the O-ring.

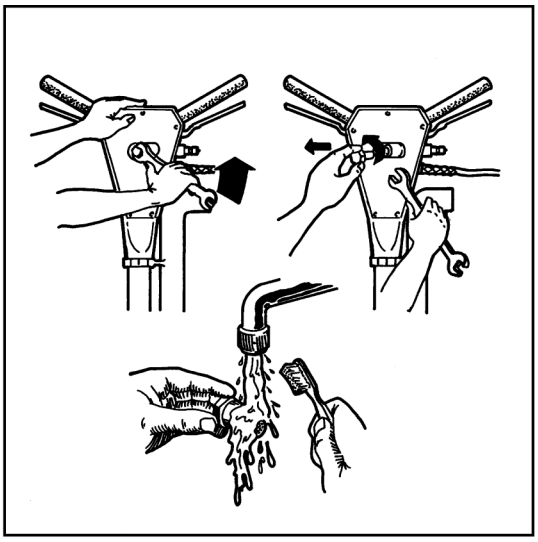


Figure 6-1. Remove Nut/Inline Filter

7. Check the spray on the jets for even flow. An uneven spray will cause improper flow of the cleaning solution (see Figure 6-2).

⚠WARNING

Do NOT spray the high pressure solution in your face or eyes. Bodily injury can result.

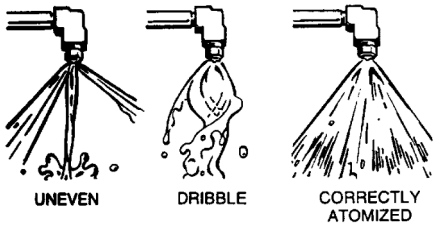


Figure 6-2. Check Jet Spray for Even Flow

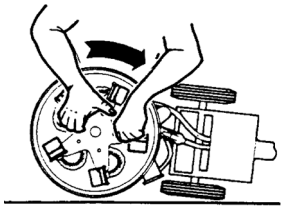


Figure 6-3. Loosen Cleaning Head Assembly

8. Loosen the cleaning head (star assembly). It unscrews in the same direction it turns during operation (or clockwise when looking at it from the underside) - see Figure 6-3.
9. After you have loosened the head assembly, spin it off with your hands. If the cleaning head is difficult to remove, you may use a 3/4" socket wrench on the exposed center nut. To prevent the gear box from turning, insert a 5/8" wrench just below the rotary union (see Figure 6-4).
10. Wash the cleaning heads and shroud assembly with a garden hose, being careful not to wet the electric motor assembly.
11. Clean any lint built up on the cleaning heads and vacuum hoses (lint buildup will restrict proper airflow and prolong drying time).

Figure 6-4. Location of Rotary Union

12. Clean off any debris that may have accumulated on the gear box shaft or the inside threaded bore of the hub (see Figure 6-5).
13. Lubricate the felt vacuum seal on top of the hub with a quality, 30 weight SAE motor oil. Also, put a few drops into the hub threads (see Figure 6-6).
14. Coat the shaft with TKX® All-Purpose Lube or a similar lubricant. Re-install the vacuum head assembly onto the shaft by rotating it counter-clockwise (Figure 6-7).

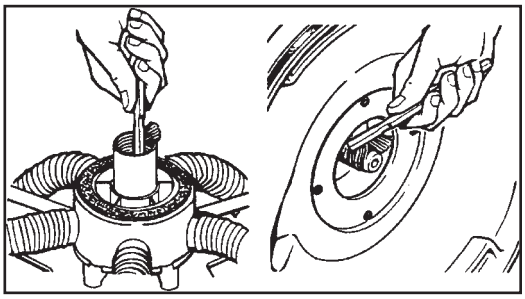


Figure 6-5. Clean Off Debris from Gear Box Shaft

CAUTION

An accumulation of debris in the gear box, if not removed, may damage the gear box oil seal. This will result in loss of oil in the gear box. If the gear box is operated without oil, severe damage may occur.

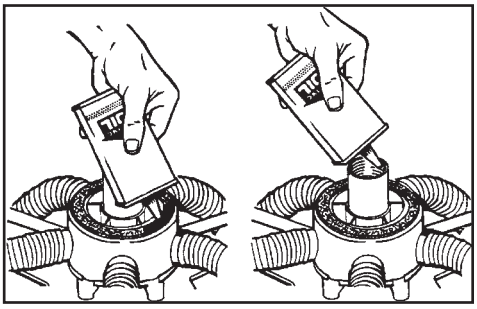


Figure 6-6. Lubricate Vacuum Seal on Top of Hub

CAUTION

While rotating the vacuum head assembly in the counter-clockwise position, make sure that it spins freely all the way down. If it begins to require the slightest finger tip pressure, unscrew it and brush off the threads.

The smallest grain of dirt or sand will obstruct the threads. If you turn too far onto a grain of dirt, the hub may become locked onto the shaft of the gear box.

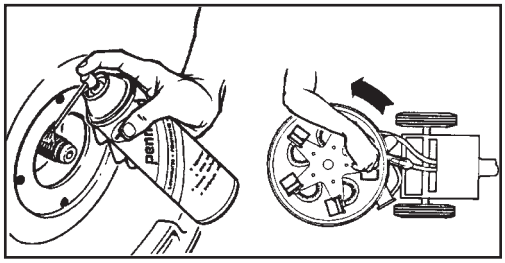


Figure 6-7. Lubricate Shaft and Re-install Head Assembly

RX-20 / CMX-20

PERIODIC MAINTENANCE

Check the oil level in the gear box on a monthly basis. This is a permanently lubricated gear box. You do not need to change the oil. However, maintaining the proper oil level is important.

To check the oil level, remove the vent plug and look into the gear box. Turn the star until you can see the inspection hole in the gear. When the RX-20 / CMX-20 is sitting flat on a table or the floor, the oil level should be up to, but not above, the middle of the gear. If oil needs to be added, use a quality 80-90 weight gear oil.

NOTICE

When checking the oil level in the gear box, you can use a toothpick as a dip stick. The oil level should read 3/8” deep.

TRANSPORT AND/OR STORAGE

Whenever your RX-20 / CMX-20 is transported or stored, HydraMaster recommends that you remove the star assembly (cleaning head). The machine will then sit flat on the floor and remain more stable, especially during transport.

FREEZE WARNING AND PROTECTION

Your RX-20 / CMX-20 can suffer damage from freezing, as can any equipment that functions with the use of water. Care must be taken to protect this machine from freezing just as you do your other equipment.

To protect it from freezing, simply blow air from an air hose through the solution quick connect with the valve open. This eliminates water from the valve, solution line, rotary union and jet assembly.

Open and close the valve several times to ensure that all water is removed.

7- Electrical Diagrams

Figure 7-1. Wiring Diagram - 110 V, 60 Hz
6037

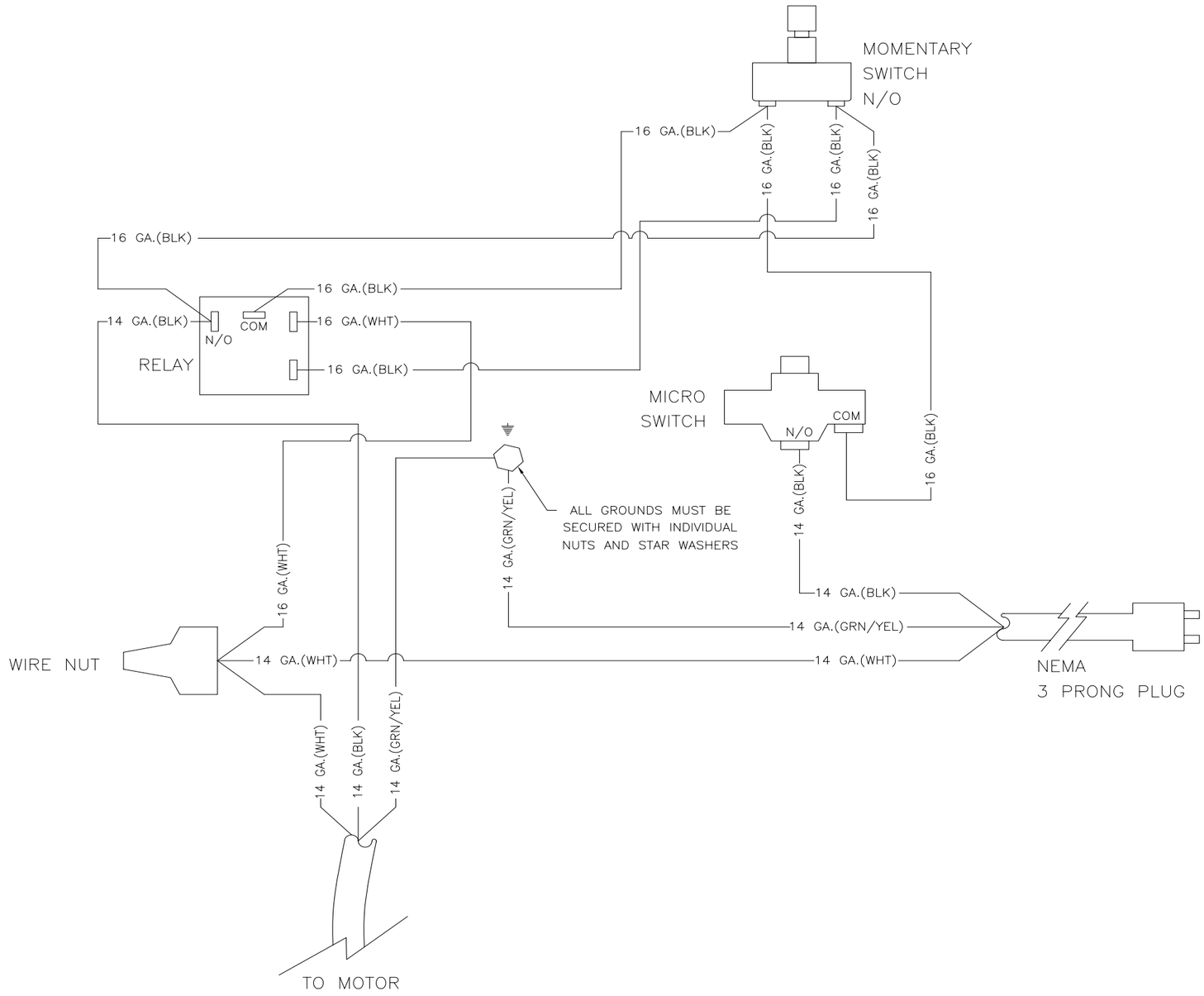
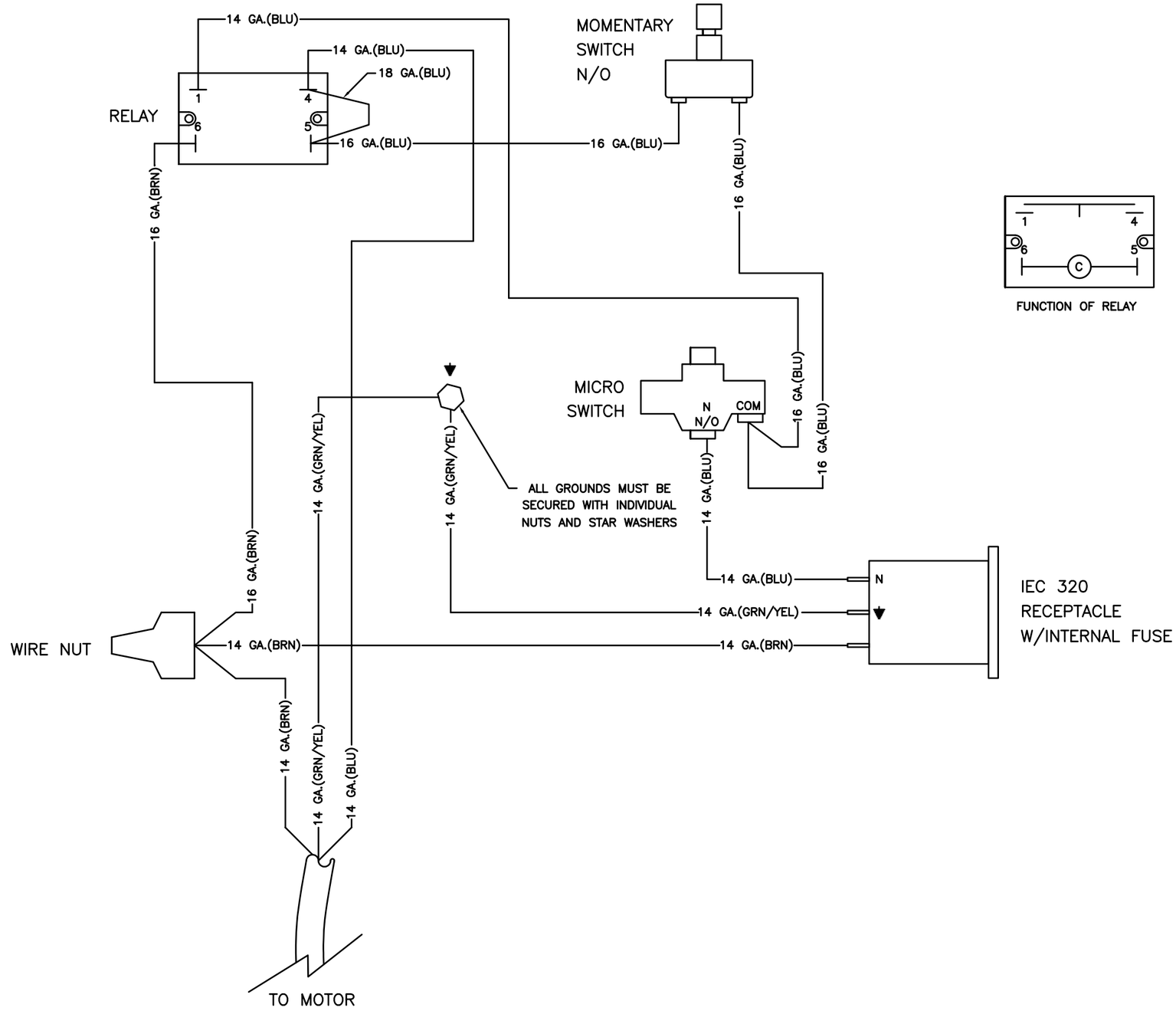


Figure 7-2. Wiring Diagram - 220 V, 50 Hz
4503 Rev. A



8 - Assembly Drawings and Parts Lists

The following RX-20 / CMX-20 major assemblies are detailed in this section:

- Final Assembly Parts List
- Upper and Lower Handle Assembly Parts List
- Handle Locking Linkage Assembly Parts List
- Base and Drive Train Assembly Parts List
- Vacuum Shoe and Skid Assembly Parts List
- Gear Box Assembly Parts List
- Vacuum Head (Original Style) Assembly Parts List
- Vacuum Shoe and Skid (Original Style) Assembly Parts List

NOTICE

The previously listed assembly drawings are based on the standard 110 V, 60 Hz version only (P/N 700-041-006).

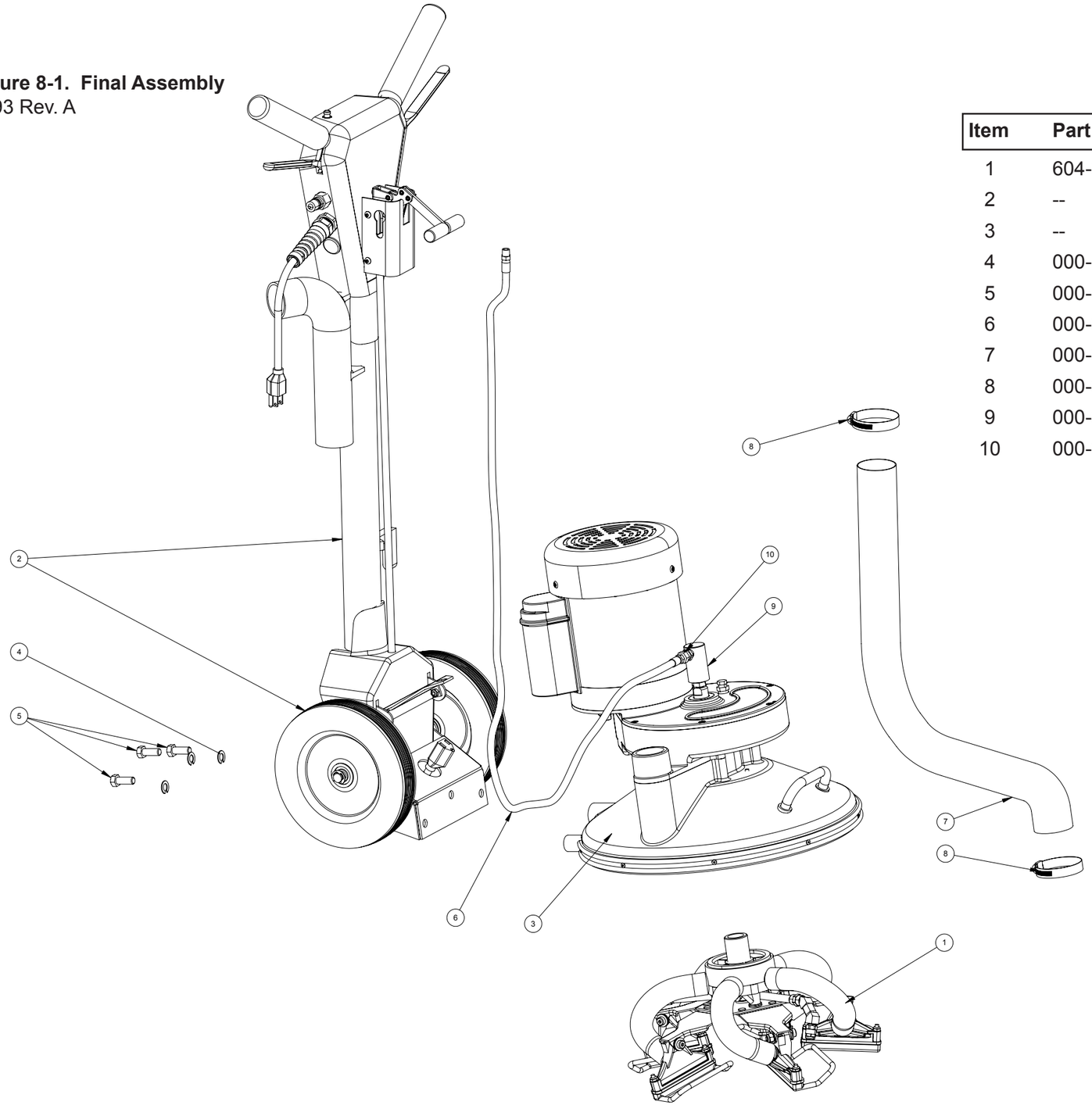
See Table 8-1 for a list of top level part numbers and associated assemblies for other configurations of RX-20 or CMX-20 Rotary Extractors.

RX-20 / CMX-20

Table 8-1. RX-20 / CMX-20 Configurations

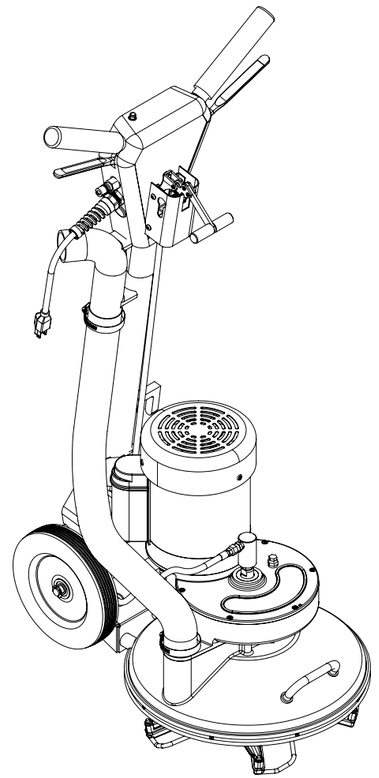
RX-20 / CMX-20	Top Level P/N	Top Level Assembly Parts List			See This Page for Detailed Parts List
		P/N	Description	Qty	
RX-20 - 110 V	700-041-006	000-057-047	Gasket, RX-20 Felt Hub	2	Page 8-16 604-999-004 110 V Final Assembly
		000-081-001	Label, RX-20	1	
		000-105-018	Plate, RX-20 Serial I.D.	1	
		604-999-004	**RX-20 - 110 V Final Assembly**	**1**	
RX-20 - 110 V, Extended Handle	700-041-106	000-057-047	Gasket, RX-20 Felt Hub	2	Page 8-17 604-999-005 110 V Extended Handle Final Assembly
		000-081-001	Label, RX-20	1	
		000-105-018	Plate, RX-20 Serial I.D.	1	
		604-999-005	**RX-20 - 110 V, Extended Handle Final Assembly**	1	
RX-20 - 220 V	700-041-007	000-057-047	Gasket, RX-20 Felt Hub	2	Page 8-18 604-999-220 220 V Final Assembly
		000-081-001	Label, RX-20	1	
		000-105-018	Plate, RX-20 Serial I.D.	1	
		604-999-220	**RX-20 - 220 Volt Final Assembly**	**1**	
RX-20 - 220 V, Extended Handle	700-041-107	000-057-047	Gasket, RX-20 Felt Hub	2	Page 8-19 604-999-225 220 V Extended Handle Final Assembly
		000-081-001	Label, RX-20	1	
		000-105-018	Plate, RX-20 Serial I.D.	1	
		604-999-225	**RX-20 - 220 V, Extended Handle Final Assembly**	1	
CMX-20 - 110 V	700-041-008	000-057-047	Gasket, RX-20 Felt Hub	2	Page 8-16 604-999-004 110 V Final Assembly
		000-081-120	Label,CMX-20	1	
		000-105-018	Plate, RX-20 Serial I.D.	1	
		604-999-004	**CMX-20 - 110 V Final Assembly**	**1**	
CMX-20 - 110 V, Extended Handle	700-041-108	000-057-047	Gasket, RX-20 Felt Hub	2	Page 8-17 604-999-005 110 V Extended Handle Final Assembly
		000-081-120	Label,CMX-20	1	
		000-105-018	Plate, RX-20 Serial I.D.	1	
		604-999-005	**CMX-20 - 110 V, Extended Handle Final Assembly**	1	
CMX-20 - 220 V	700-041-009	000-057-047	Gasket, RX-20 Felt Hub	2	Page 8-18 604-999-220 220 V Final Assembly
		000-081-120	Label,CMX-20	1	
		000-105-018	Plate, RX-20 Serial I.D.	1	
		604-999-220	**CMX-20 - 220 Volt Final Assembly**	**1**	
CMX-20 - 220 V, Extended Handle	700-041-109	000-057-047	Gasket, RX-20 Felt Hub	2	Page 8-19 604-999-225 220 V Extended Handle Final Assembly
		000-081-120	Label,CMX-20	1	
		000-105-018	Plate, RX-20 Serial I.D.	1	
		604-999-225	**RX-20 - 220 V, Extended Handle Final Assembly**	1	

Figure 8-1. Final Assembly
6393 Rev. A



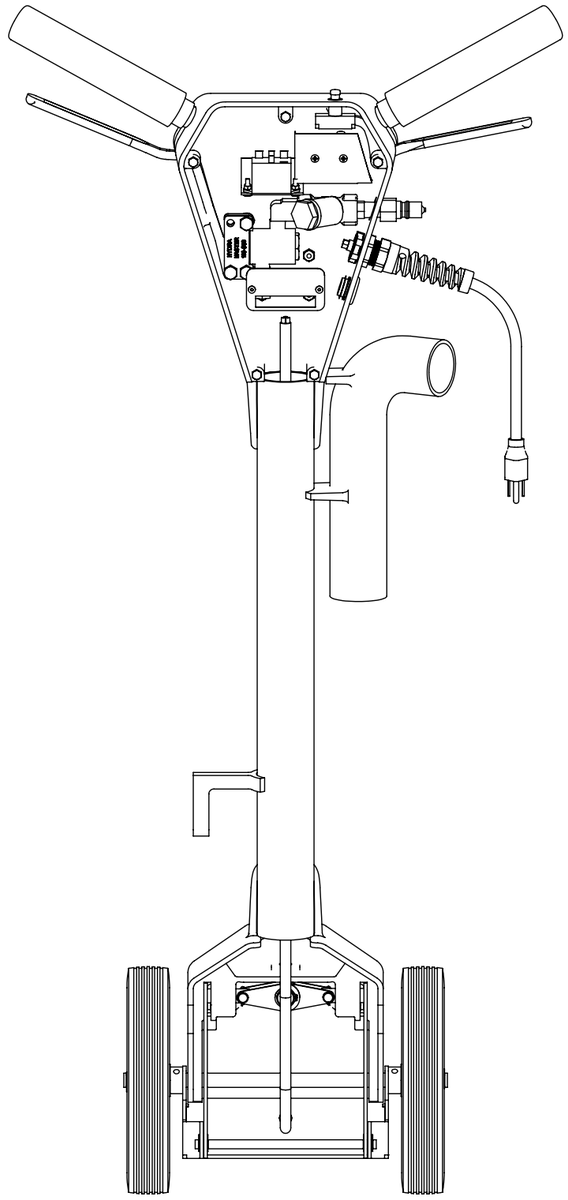
Final Assembly Parts List

Item	Part Number	Description	Qty
1	604-053-002	Assembly, Vacuum Head	1
2	--	Assembly, Upper and Lower Handle	1
3	--	Assembly, Base and Drive Train	1
4	000-174-057	Washer, 3/8” Lock	3
5	000-143-096	Screw, 3/8”-16UNC X 1.00” Lg. Hex Head	3
6	000-068-176	Hose, 3/16” X 47” w/ Inserts	1
7	000-068-040	Hose, 2” Vacuum - Base To Manifold	1
8	000-033-010	Clamp, #32 Hose	2
9	000-052-294	Union, Rotary	1
10	000-052-001	Fitting, Swivel, 2M-2 UFS	1



RX-20 / CMX-20

Figure 8-2. Upper and Lower Handle Assembly - Overview
6391 Rev. D



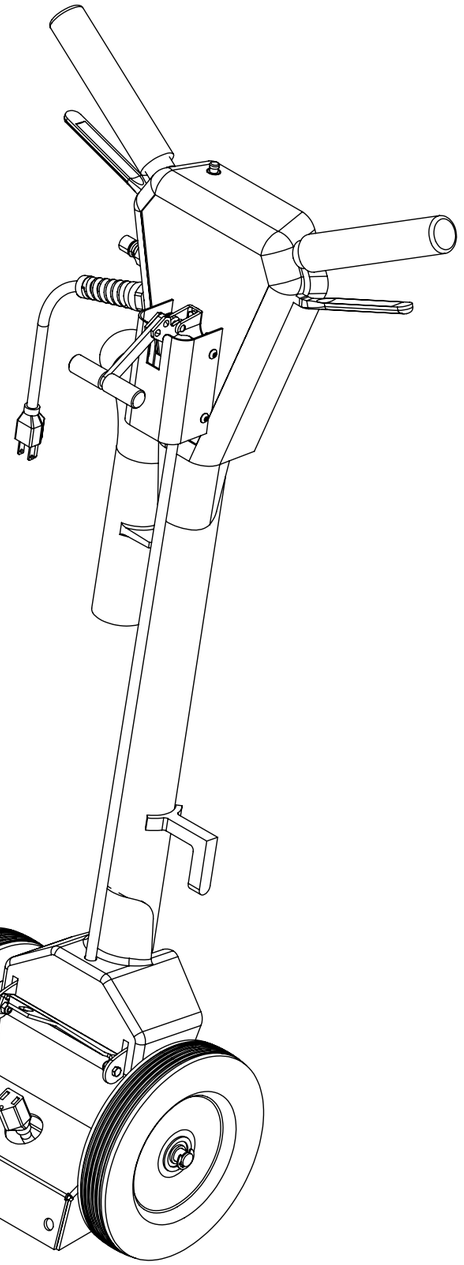


Figure 8-3. Upper and Lower Handle Assembly - Parts View 1 of 2
6391 Rev. D

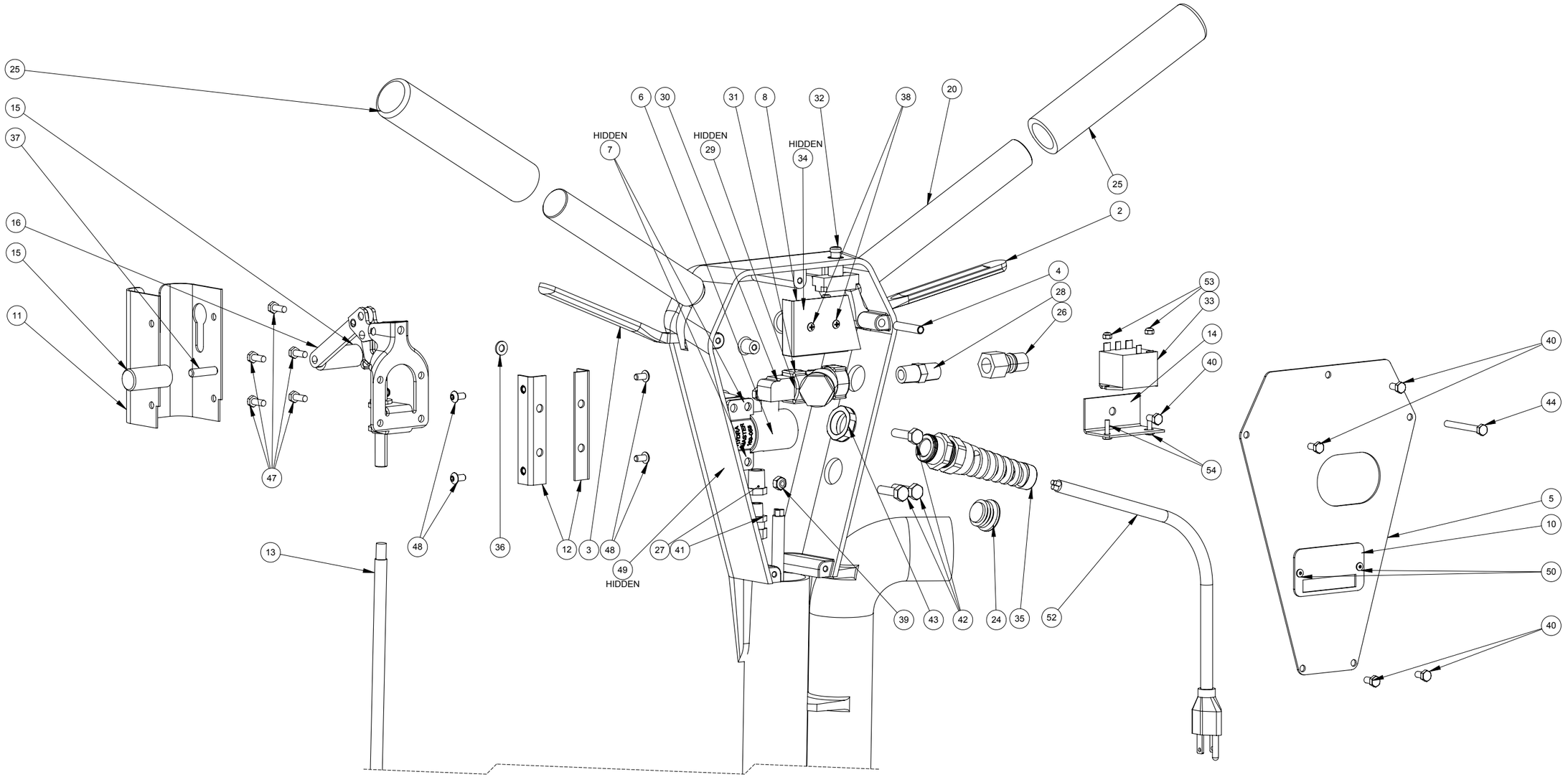
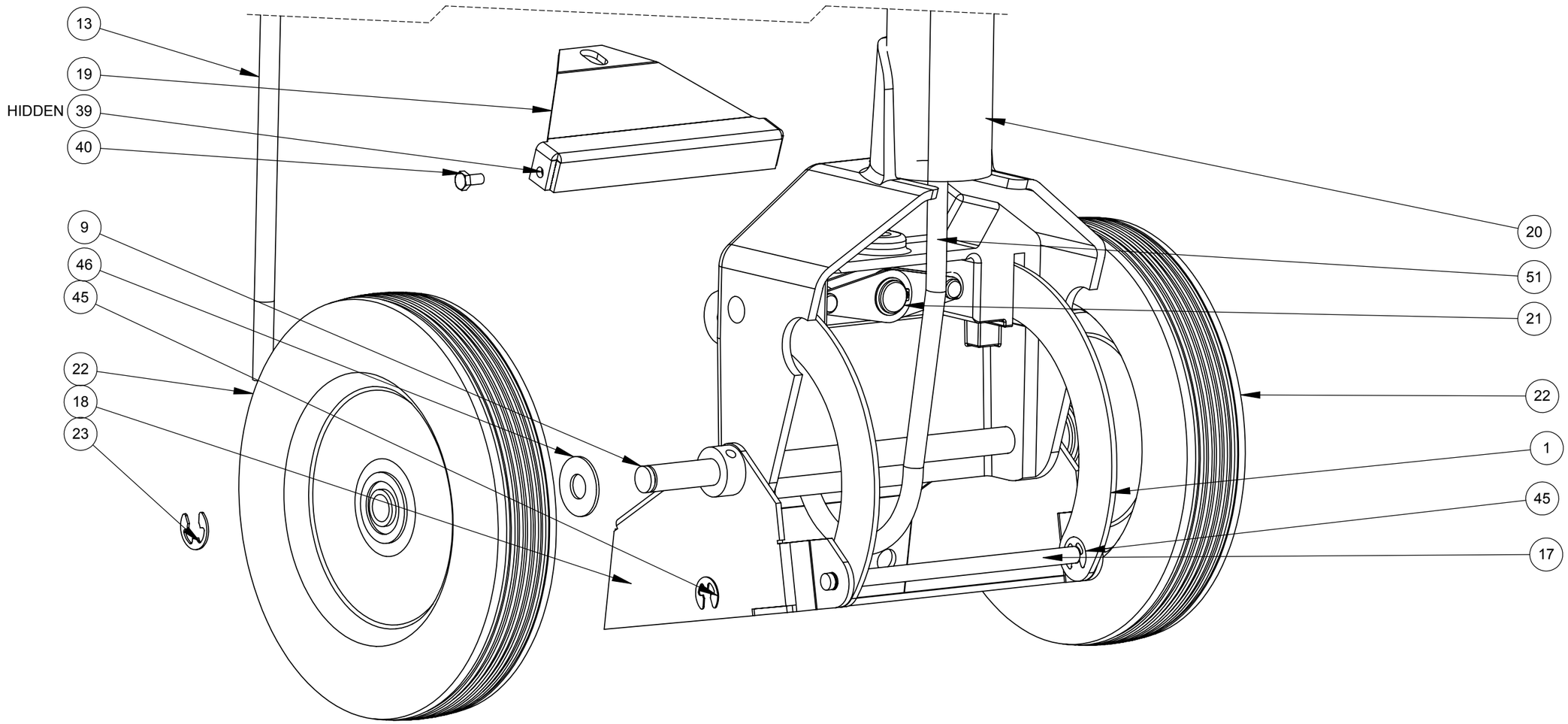


Figure 8-4. Upper and Lower Handle Assembly - Parts View 2 of 2
6391 Rev. D



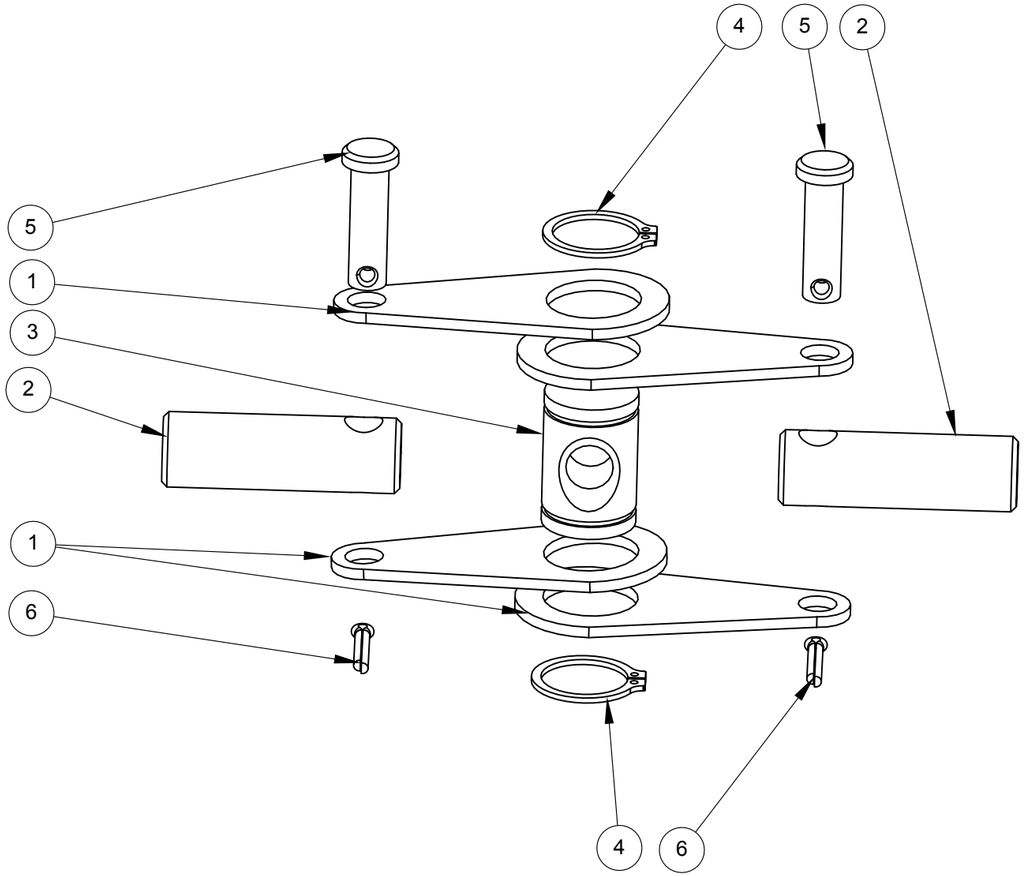
Upper and Lower Handle Assembly Parts List

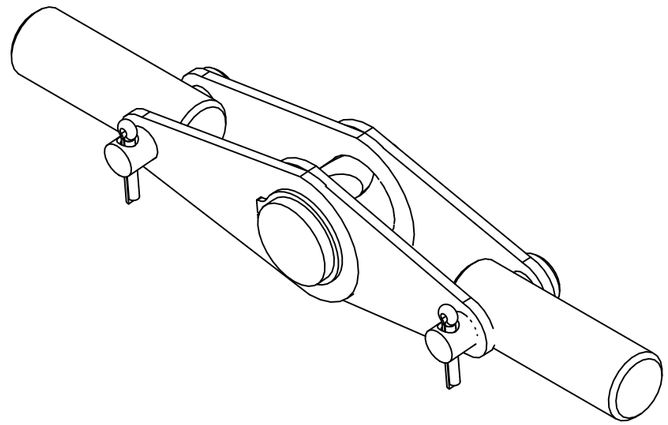
Item	Part Number	Description	Qty
1	000-107-096	Handle, Arc	2
2	000-167-010	Handle, Right Hand Trigger	1
3	000-167-009	RX-20 Handle, Left Hand Trigger	1
4	000-107-103	RX-20 Trigger Pivot	1
5	000-105-007	Plate, Back - RX-20 Handle	1
6	000-169-058	Valve, S/S HydraMaster Solution	1
7	000-154-001	Spacer, 1/4” X 5/16” - S/S Solution Valve	2
8	000-108-014	Shield, Micro Switch	1
9	000-141-004	Axle, Wheel - RX-20	1
10	000-105-018	Plate, RX-20 Serial I.D.	1
11	000-041-351	Cover, RX-20 Linkage Clamp	1
12	000-015-551	Bracket, RX-20 Linkage Clamp	2
13	000-141-007	Adjusting Rod Assembly RX-20	1
14	000-015-190	Bracket, AC Relay	1
15	000-061-030	Handle, RX-20 ‘T’ Handle	2
16	000-033-114	Clamp, Linkage - Modified	1
17	000-141-031	Rod, Handle Arc RX-20	1
18	000-015-139	Bracket, Hi Speed RX-20 Handle To Base Weldment	1
19	000-015-006	RX-20 Bracket, Head Stabilizer - Weldment	1
20	000-061-017	Handle, Hi Speed - Weldment	1
21	604-051-002	RX-20 Assembly, Handle Locking Linkage	1
22	000-177-001	Wheel, 8”	2
23	000-139-009	Ring, Snap Ring (E-Clip) X 1/2	2
24	000-106-026	Plug, 1” Cap	1
25	000-061-004	Grip, Foam - Handle	2
26	000-052-050	Quick Connect, 440 Male w/ Viton Std	1
27	000-052-059	Bushing, 1/4” MPT X 1/8” FPT	1

Item	Part Number	Description	Qty
28	000-052-071	Nipple, 1/4” NPT Hex	1
29	000-052-072	Nipple, 1/4” NPT Close	1
30	000-052-085	Elbow, 1/4” NPT Street	1
31	000-049-033	Filter, In-Line, “Y”	1
32	000-157-151	Switch, Chrome, Momentary	1
33	000-157-042	Relay, AC Relay 120 V	1
34	000-157-032	Switch, Micro - RX-20	1
35	000-108-012	Protector, Power Cord Relief	1
36	000-174-001	Washer, #10 Flat	1
37	000-156-031	Stud, 1/4”-20UNC X 1.00” Lg.	1
38	000-143-048	Screw, #10-24UNC X 0.25” Lg. Pan Head Phillips	2
39	000-094-034	Nut, #10-24UNC Nylock	7
40	000-143-166	Screw, #10-24UNC X 3/8” Lg. Hex Head	7
41	000-052-001	Fitting, Swivel 2M-2 UFS)	1
42	000-143-002	Screw, 1/4”-20UNC X 1.00” Lg. Hex Head	3
43	000-094-036	Nut, 1/2” NPT Pipe Plastic	1
44	000-143-065	Screw, #10-24UNC X 1.75” Lg. Hex Head	1
45	000-139-010	Ring, Snap Ring (E-Clip) X 5/16”	4
46	000-174-006	Washer, 7/16” Flat	2
47	000-143-126	Screw, #10-24UNC X 0.50” Lg. Hex Head	5
48	000-143-107	Screw, #10-24UNC X 3/8”” Lg. Button Head	4
49	000-094-009	Nut, 1/4”-20UNC Nylock	1
50	000-040-003	Rivet, 1/8” X 5/16”	2
51	000-178-039	Cord, Power - 14/3 Gray X 42” w/ Female	1
52	000-178-004	Cord, Power 14/3 Gray X 50’ w/ Male	1
53	000-094-063	Nut, #6-32UNC Nylock	2
54	000-143-575	Screw, #6-32UNC X 0.50” Lg. Hex Head	2

RX-20 / CMX-20

Figure 8-5. Handle Locking Linkage Assembly
6390





Handle Locking Linkage Assembly Parts List

Item	Part Number	Description	Qty
1	000-107-097	Link - RX -20	4
2	000-107-101	Plunger	2
3	000-094-030	Adjusting Nut	1
4	000-139-006	Ring, 5/8” Snap	2
5	000-103-012	Pin, 1/4” X 7/8” - Clevis	2
6	000-103-013	Pin, Cotter	2

Figure 8-6. Base and Drive Train Assembly
6392 Rev. A

Base and Drive Train Assembly Parts List

Item	Part Number	Description	Qty
1	000-105-008	Plate, Seal	1
2	000-059-001	Gear Box - Complete	1
3	--	Base w/ Handle - Weldment	1
4	000-091-015	Motor, 1/2 Hp TEFC	1
5	000-052-059	Bushing, 1/4” MPT X 1/8” FPT	1
6	000-106-001	Plug, 1/8” NPT	1
7	000-174-057	Washer, 3/8” Lock	3
8	000-174-055	Washer, Flr Tech Latch Pivot	3
9	000-143-096	Screw, 3/8”-16UNC X 1.00” Lg. Hex Head	3
10	000-143-075	Screw, 1/4”-20UNC X 1.50” Lg. Socket Head	4
11	000-143-166	Screw, #10-24UNC X 3/8” Lg. Hex Head	2
12	000-131-014	Gasket, RX-20 Roto Shroud	1
13	000-040-003	Rivet, 1/8” X 5/16”	8
14	000-050-002	Fan, Motor - RX-20	1
15	000-041-123	Cover, 1/2 Hp Motor	1
16	000-077-012	Key, 3/16” X 2.5” Lg. Class 2 Fit	1

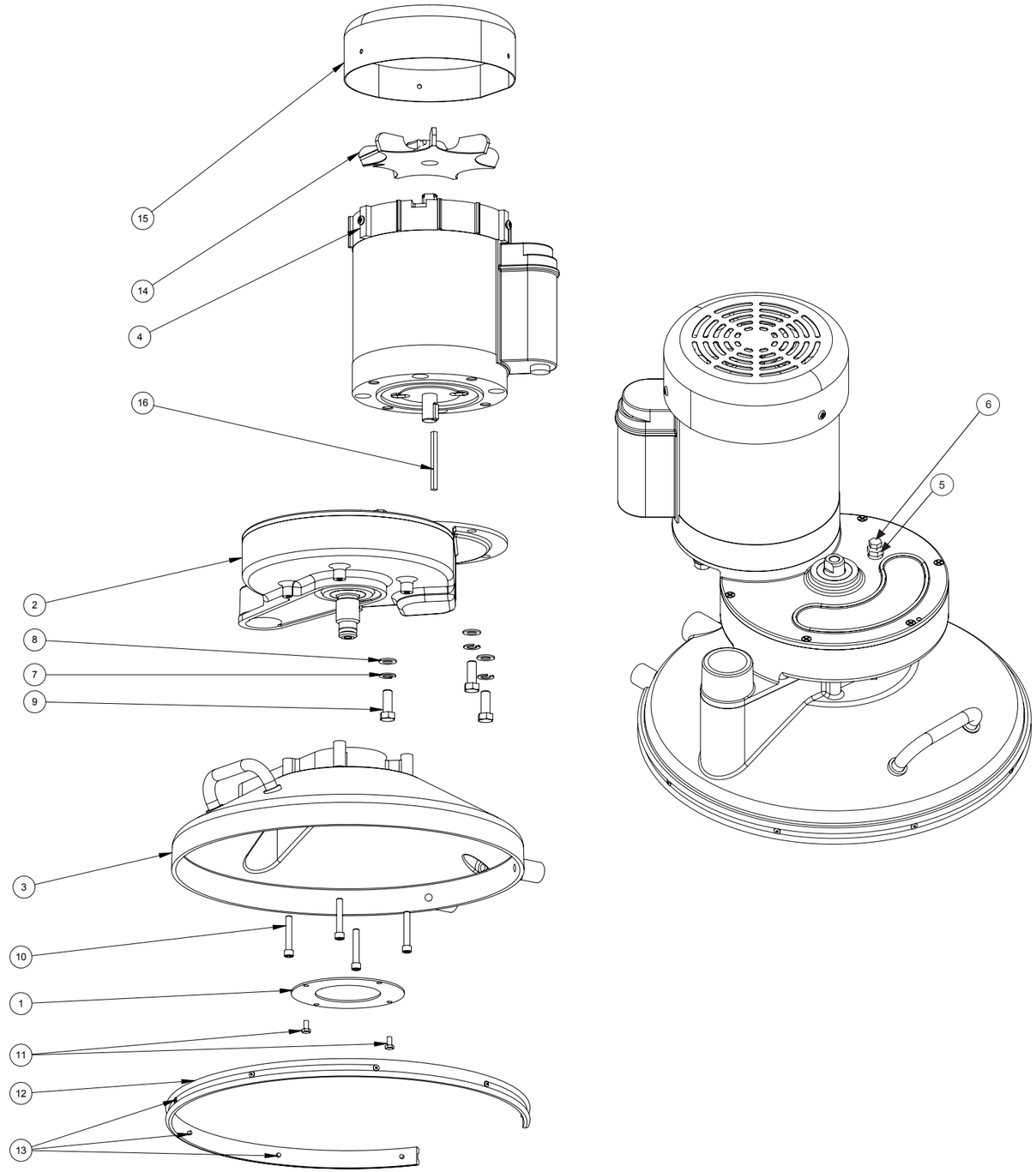
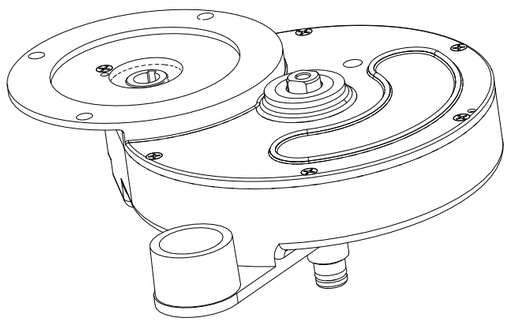


Figure 8-7. Gear Box
2191 Rev. C

Gear Box Assembly Parts List

Item	Part Number	Description	Qty
1	000-042-007	Body, Gear Box - RX-20	1
2	000-041-078	Cover, Gear Box - RX-20	1
3	000-059-004	Gear, Spur - Spur Gear Box Driven Gear	1
4	000-150-002	Output Shaft, Spur, Double Lead Thread	1
5	000-059-006	Gear/Input Shaft Assembly	1
6	000-008-007	Bearing, Spur - Gear Box	1
7	000-008-008	Bearing, Spur, Race - Gear Box	2
8	000-008-009	Bearing, Spur - Gear Box	1
9	000-008-012	Bearing, Spur - Gear Box	1
10	000-008-041	Bearing, Spur - Gear Box	1
11	000-097-009	O-Ring, Cast Gear Box	1
12	000-103-023	Pin, Dowel - 3/16” X 3/4”	2
13	000-147-018	Seal, Spur Gear Box	1
14	000-147-019	Seal, Spur Gear Box	1
15	000-147-015	Seal, Thread Shaft - RX-20	1
16	000-143-157	Screw, #10-24UNC X 1.00” Lg. Flat Head	1
17	000-143-114	Screw, #10-24UNC X 0.50” Lg. Flat Head Phillips	5



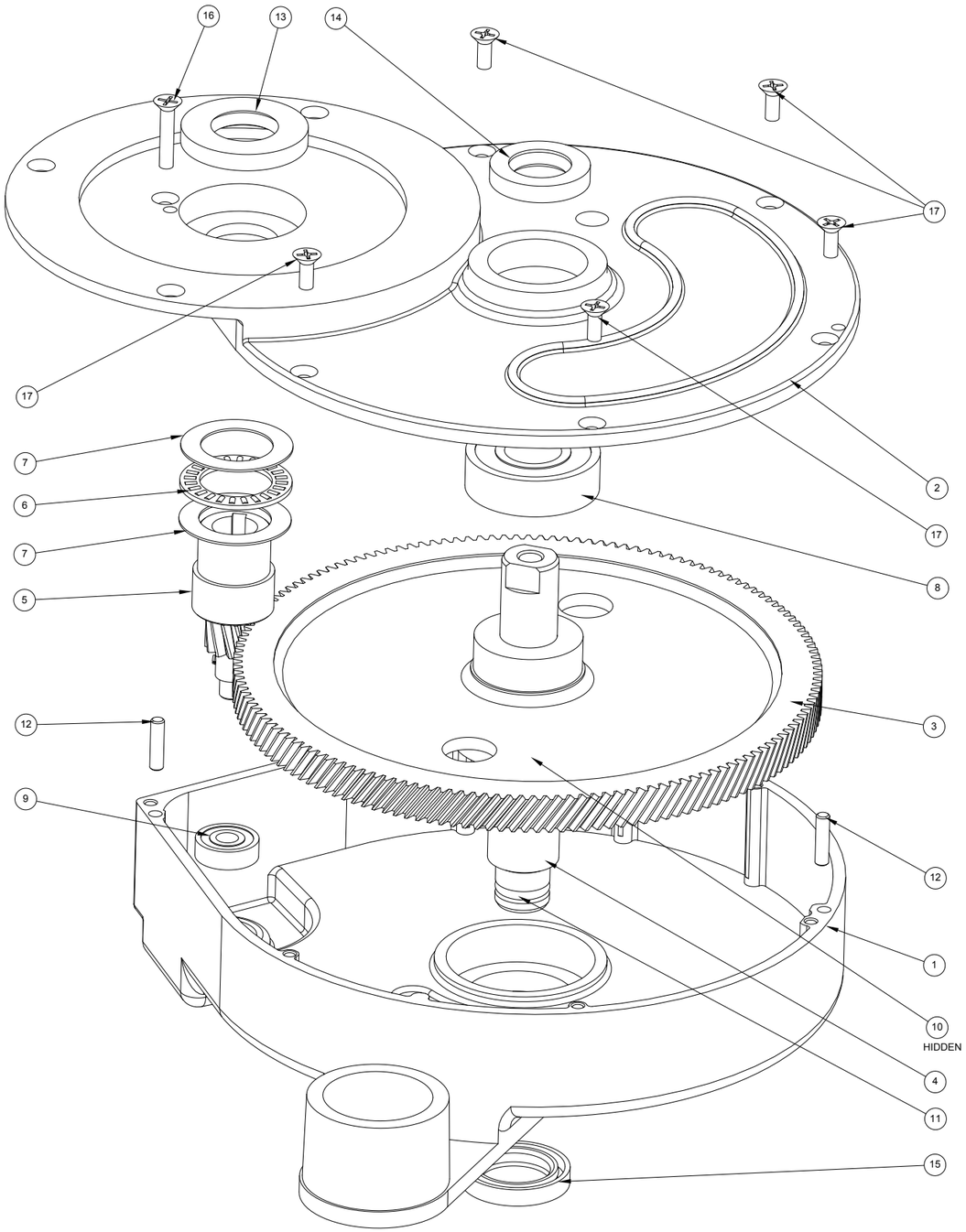
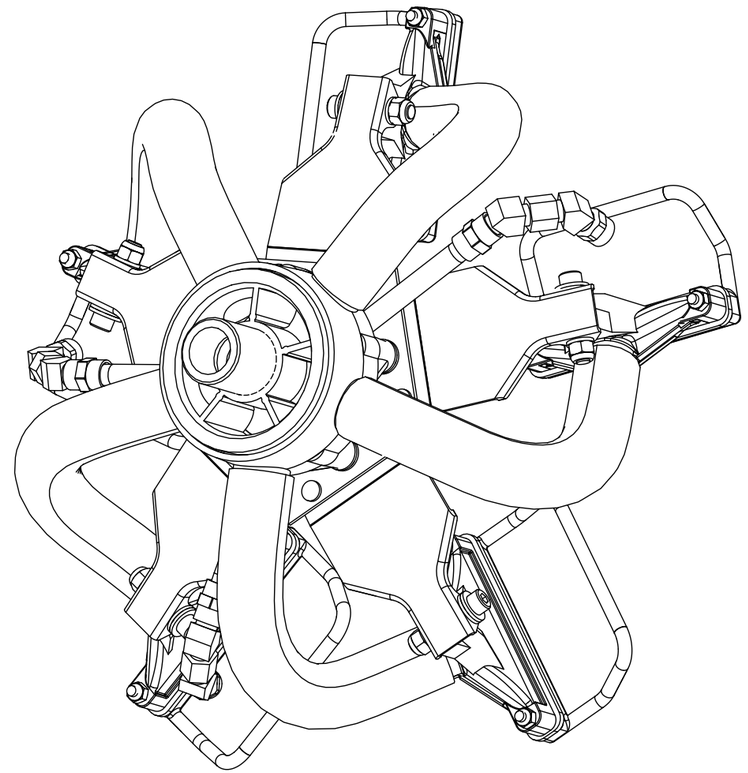
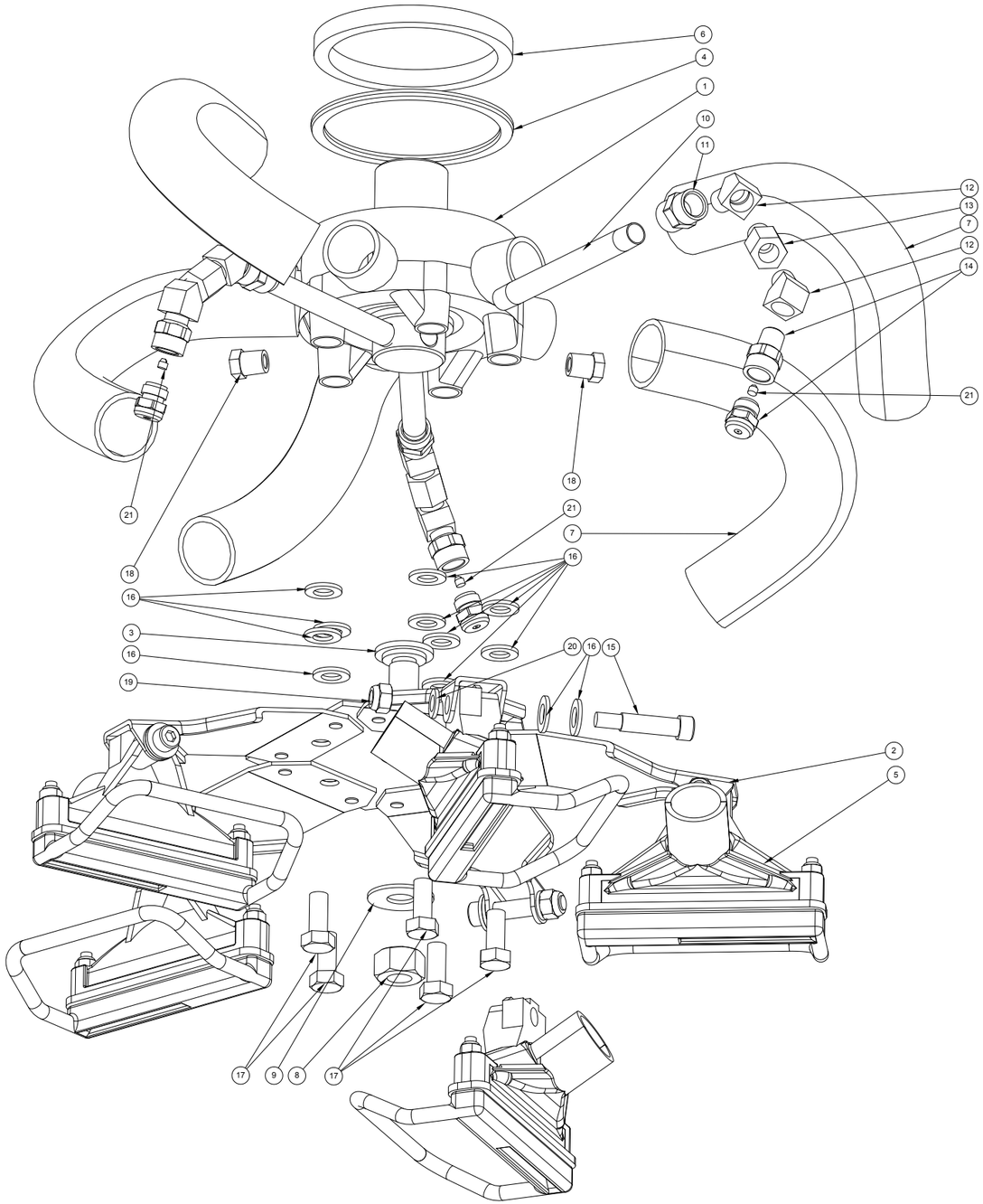


Figure 8-8. Vacuum Head Assembly
6389 Rev. A



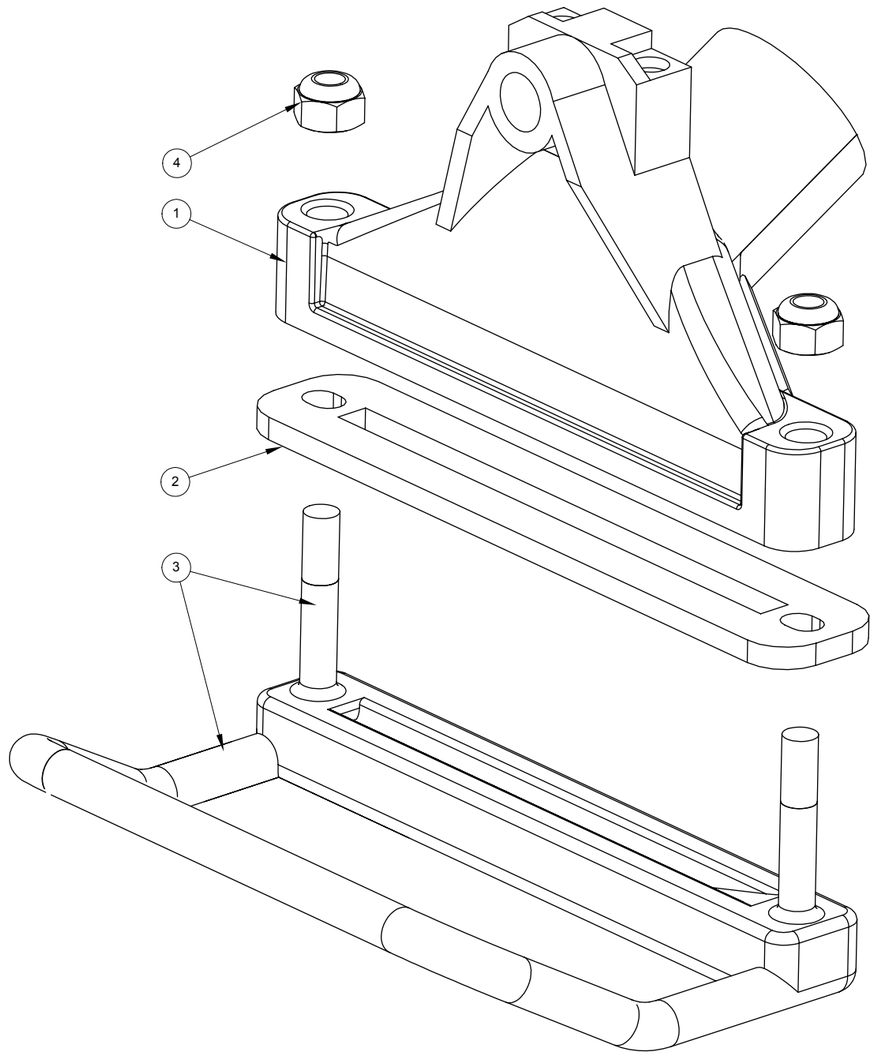


RX-20 / CMX-20

Vacuum Head Assembly Parts List

Item	Part Number	Description	Qty
1	000-107-020	RX-20 Plastic Hub - Double Lead Insert	1
2	000-107-089	Star, Assembly	1
3	000-143-045	Screw, 1/2” Modified RX-20 Star Removal Bolt	1
4	000-139-001	Ring, Plastic	1
5	000-064-012	RX-20 Assembly, Vacuum Shoe and Skid	5
6	000-057-047	Gasket, Felt	1
7	000-068-174	Hose, 1” Vacuum - Gray	5
8	000-094-019	Nut, 1/2”-13UNC Hex	1
9	000-174-006	Washer, 7/16” Flat	1
10	000-052-515	Nipple, 1/8” NPT X 4” Lg.	3
11	000-052-440	Coupler, 1/8” FPT Brass	3
12	000-052-078	Elbow, 1/8” NPT X 45° Street	6
13	000-052-427	Bushing, 1/8” NPT X 1/8” FPT	3
14	000-076-076	Jet, Full Cone 1/8” – RX-20	3
15	000-143-162	Screw, 5/16” X 1” Lg. Stripper - 1/4”-20UNC	5
16	000-174-049	Washer, 5/16” Flat	20
17	000-143-012	Screw, 5/16”-18UNC X 3/4” Lg.	5
18	000-106-001	Plug, 1/8” NPT	2
19	000-094-009	Nut, 1/4”-20UNC Nylock	5
20	000-174-003	Washer, 1/4” Flat	5
21	000-076-078	Vane, Cone Jet	3

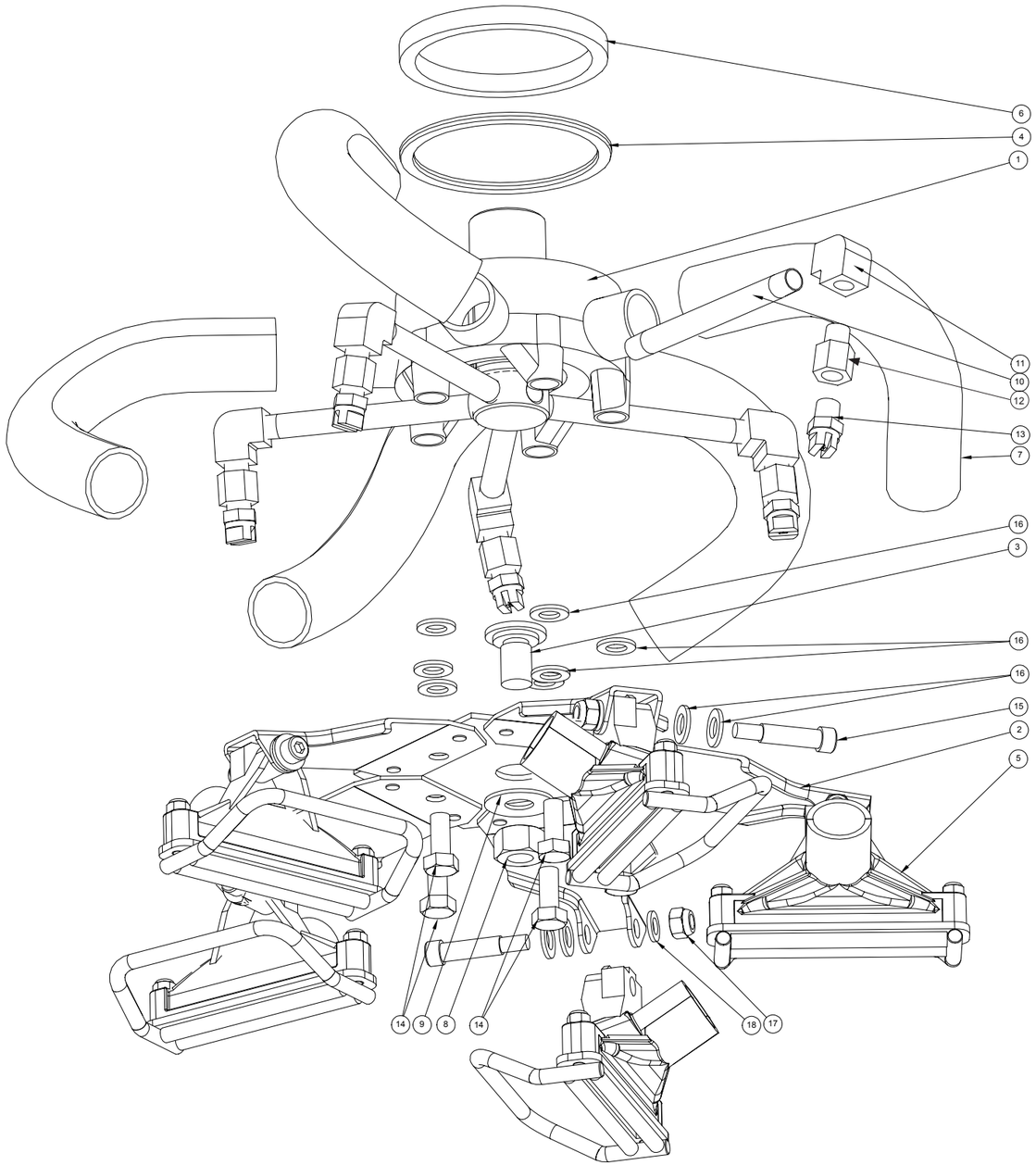
Figure 8-9. Vacuum Shoe and Skid Assembly
6386



Vacuum Shoe and Skid Assembly Parts List

Item	Part Number	Description	Qty
1	000-064-011	RX-20 Shoe, 4” Vac Head - Weldment	1
2	000-057-048	Gasket, RX-20 Vacuum Head	1
3	000-107-245	RX-20 Skid	1
4	000-094-058	Nut, #10-32UNF - Nylock	2

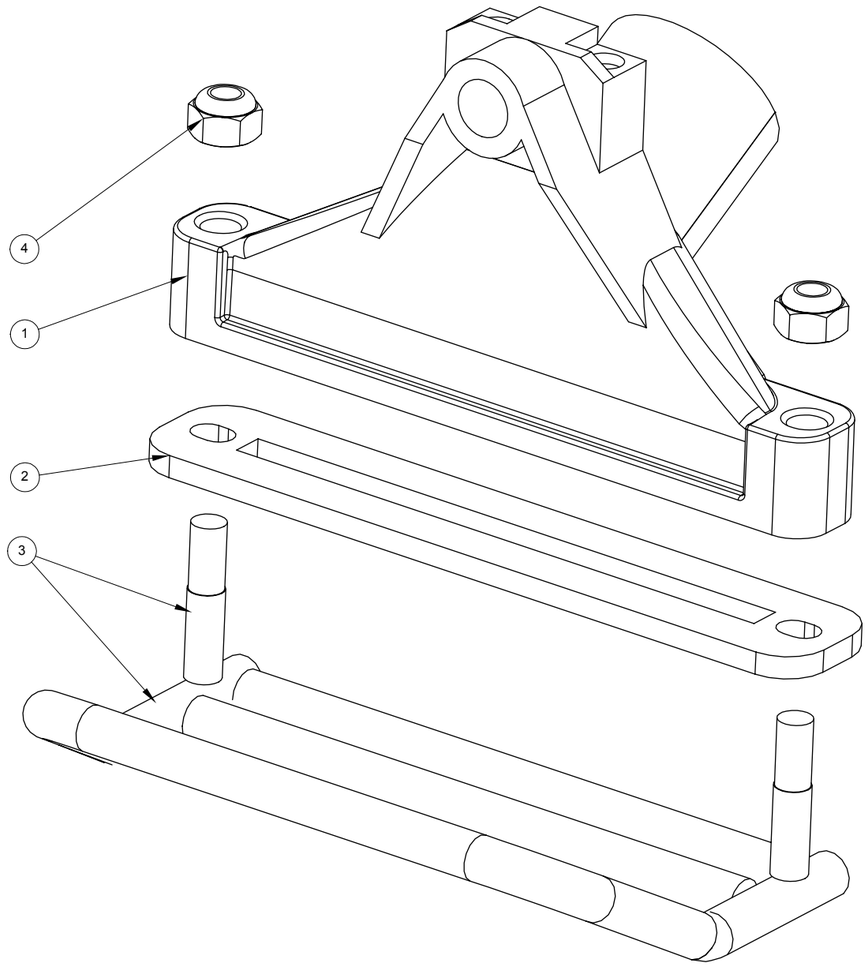
Figure 8-10. Vacuum Head (Original Style) Assembly
6388



Vacuum Head (Original Style) Assembly Parts List

Item	Part Number	Description	Qty
1	000-107-020	Plastic Hub, Double Lead Insert	1
2	000-107-089	Star, Wheel Assembly	1
3	000-143-045	Screw,1/2” Modified RX-20 Star Removal Bolt	1
4	000-139-001	Ring, Plastic RX-20	1
5	00-064-012-O	Shoe and Skid Assembly (Original Style)	5
6	000-057-047	Gasket, Felt	1
7	000-068-174	Hose, 1” Vacuum - Gray	5
8	000-094-019	Nut, 1/2”-13UNC Hex	1
9	000-174-006	Washer, 7/16” Flat	1
10	000-052-080	Nipple, 1/8” NPT x 4 Lg.	5
11	000-052-089	Elbow, 1/8” NPT Female	5
12	000-052-427	Bushing, 1/8” NPT x 1/8 FPT	5
13	000-076-037	Jet, H 1/8Vv 80015 S/S	5
14	000-143-012	Screw, 5/16”-18UNC x 0.75 Lg. Hex Head	5
15	000-143-162	Screw, 5/16 x 1” Stripper - 1/4” -20UNC	5
16	000-174-049	Washer, 5/16” Flat	20
17	000-094-009	Nut, 1/4”-20UNC Hex Nylock	5
18	000-174-003	Washer, 1/4” Flat	5

Figure 8-11. Vacuum Shoe and Skid (Original Style) Assembly
6387



Vacuum Shoe and Skid (Original Style) Assembly Parts List

Item	Part Number	Description	Qty
1	000-064-011	4” Vac Head - Weldment	1
2	000-057-048	Gasket, RX-20 Vacuum Head	1
3	000-107-095	Skid, Wire - RX-20	1
4	000-094-058	Nut, #10-32UNF - Nylock	2

RX-20 / CMX-20

RX-20/CMX-20 - 110 V Assembly Parts List (P/N 604-999-004)

Part Number	Description	Qty
000-006-009	Base, Hi Speed, RX-20	1
000-015-006	Bracket, Head Stabilizer	1
000-015-139	Bracket, Hi Speed RX-20 Handle	1
000-015-190	Bracket, RX-20 Relay Mount	1
000-015-551	Bracket, RX-20 Linkage	2
000-015-552	Bracket, RX-20 Linkage	2
000-033-010	Clamp, Size 32 Hose	2
000-033-114	Clamp, Linkage	1
000-041-013	Cover, Handle Access	1
000-041-123	Cover, 1/2 Hp TEFC Motor	1
000-041-352	Cover, RX-20 Linkage Clamp - Painted	1
000-049-033	Filter,1/4” Inline Y	1
000-052-001	Fitting, Swivel, 2M- 2UFS	2
000-052-050	1/4” Male Quick Connector	1
000-052-059	Bushing,1/4” MPT X 1/8” FPT	2
000-052-071	Nipple,1/4 Brass Hex	1
000-052-072	Nipple,1/4 Brass Close	1
000-052-085	Elbow, 1/4” Brass Street	1
000-052-294	Rotary Union, Brass	1
000-059-001	Gear Box Complete, RX-20	1
000-061-004	Handle, Foam Grip-Closed	2
000-061-017	Handle, Hi Speed, RX-20	1
000-061-030	Handle, RX-20 Clamp “T” (Raw)	2
000-068-176	Hose, 3/16” X 45” Teflon	1
000-068-193	Hose, 2” Clear Vacuum	2.8 ft
000-091-015	Motor, 1/2 Hp TEFC	1
000-094-030-07	Nut, Adjusting, Linkage	1
000-094-036	Nut, 1/2” NPT Pipe Plastic	1

Part Number	Description	Qty
000-103-012	Pin, 1/4 X 7/8” Clevis	2
000-105-008	Plate, Cast RX-20 Base	1
000-106-001	Plug, 1/8” Brass	1
000-106-014	Plug, RX-20 Gear Box Vent	1
000-106-026	Plug, 1” Cap	1
000-107-096	Handle Arc RX-20	2
000-107-097	Link - RX-20	4
000-107-101	Plunger - RX-20	2
000-107-103	Trigger Pivot- RX-20	1
000-108-012	Protector, Power Cord	1
000-108-014	Shield, RX-20 Micro	1
000-131-014	Gasket, RX-20 Roto Shroud	3.2 ft
000-139-006	Ring, 5/8” Snap	2
000-141-004	Axle, Hi Speed RX-20 Wheel	1
000-141-007	Rod Assembly, RX-20 Handle Adj. Clamp	1
000-141-031	Rod, Handle Arc RX-20	1
000-156-031	1/4-20 X 1” S/S	1
000-157-032	Switch, Micro - RX-20	1
000-157-149	Relay, AC Relay 120 V	1
000-157-151	Switch, Chrome Momentary	1
000-167-009	Trigger, RX-20 Solution	1
000-167-010	Trigger, RX-20 Power	1
000-169-058	Valve, S/S HydraMaster	1
000-174-030	Washer, 5/8” I.D. X 7/8”	2
000-177-001	Wheel, 8” Hi Speed RX-20	2
000-178-004	Cord,14/3 X 50’Gray-	1
000-178-039	Cord,14/3 X 42” Modi	1
604-053-002	Dble.Thread Vac. Head	1

RX-20/CMX-20 - 110 V, Extended Handle Assembly Parts List (P/N 604-999-005)

Part Number	Description	Qty
000-006-009	Base, Hi Speed, RX-20	1
000-015-009	Bracket, Hi Speed RX-20 Handle Brace	1
000-015-139	Bracket, Hi Speed RX-20 Handle	1
000-015-190	Bracket, RX-20 Relay Mount	1
000-015-551	Bracket, RX-20 Linkage	2
000-033-010	Clamp, Size 32 Hose	2
000-033-114	Clamp, Linkage	1
000-041-013	Cover, Handle Access	1
000-041-123	Cover, 1/2 Hp TEFC Motor	1
000-041-351	Cover, RX-20	1
000-049-033	Filter,1/4” Inline Y	1
000-052-001	Fitting, Swivel, 2M- 2UFS	2
000-052-050	1/4” Male Quick Connector	1
000-052-059	Bushing,1/4” MPT X 1/8” FPT	2
000-052-071	Nipple,1/4 Brass Hex	1
000-052-072	Nipple,1/4 Brass Close	1
000-052-085	Elbow, 1/4” Brass Street	1
000-052-294	Rotary Union, Brass	1
000-059-001	Gear Box Complete, RX-20	1
000-061-004	Handle, Foam Grip-Closed	2
000-061-030	Handle, RX-20 Clamp “T” (Raw)	2
000-068-183	Hose, 3/16” X 51” Teflon	1
000-068-193	Hose, 2” Clear Vacuum	3.8 ft
000-091-015	Motor, 1/2 Hp TEFC	1
000-094-010	Nut,1/4-20 S/S Hex	1
000-094-021	Nut, Wire-Yellow	1
000-094-030-07	Nut, Adjusting, Linkage	1
000-094-036	Nut, 1/2” NPT Pipe Plastic	1
000-103-012	Pin, 1/4 X 7/8” Clevis	2
000-105-008	Plate, Cast RX-20 Base	1
000-106-001	Plug, 1/8” Brass	1
000-106-014	Plug, RX-20 Gear Box Vent	1
000-106-026	Plug, 1” Cap	1
000-107-096	Handle Arc RX-20	2
000-107-097	Link - RX-20	4
000-107-101	Plunger - RX-20	2
000-107-103	Trigger Pivot- RX-20	1
000-108-012	Protector, Power Cord	1
000-108-014	Shield, RX-20 Micro	1
000-131-014	Gasket, RX-20 Roto Shroud	3.2 ft
000-139-006	Ring, 5/8” Snap	2
000-140-001	Rivet,AB4-3A Aluminum	2
000-141-004	Axle, Hi Speed RX-20 Wheel	1
000-141-008	Rod Assembly, Extend	1
000-141-031	Rod, Handle Arc RX-20	1
000-143-002	Screw,1/4-20 X 1”HHC	3
000-143-048	Screw,6-32 X 1” Pan	2
000-143-132	Screw,10-24 X 3/4” S/S HHCS	5
000-143-336	Screw, 10-32 X 1/4” Pan	1
000-154-001	Spacer,1/4 X 5/16-S/	2
000-156-031	1/4-20 X 1” S/S	1
000-157-032	Switch, Micro - RX-20	1
000-157-149	Relay, AC Relay 120 V	1
000-157-151	Switch, Chrome Momentary	1
000-167-009	Trigger, RX-20 Solution	1
000-167-010	Trigger, RX-20 Power	1
000-169-058	Valve, S/S HydraMaster	1
000-174-030	Washer, 5/8” I.D. X 7/8”	2
000-177-001	Wheel, 8” Hi Speed RX-20	2
000-178-004	Cord,14/3 X 50’Gray	1
000-178-037	Cord, 14/3 X 48” Mod	1
604-051-008	Handle Assembly, Ext	1
604-053-002	Dble.Thread Vac. Head	1

RX-20 / CMX-20

RX-20/CMX-20 - 220 V Assembly Parts List (P/N 604-999-220)

Part Number	Description	Qty
000-006-009	Base, Hi Speed, RX-20	1
000-011-001	Bezel, Threaded	1
000-015-006	Bracket, Head Stabilizer	1
000-015-139	Bracket, Hi Speed RX-20 Handle	1
000-015-190	Bracket, RX-20 Relay Mount	1
000-015-552	Bracket, RX-20 Linkage	2
000-033-010	Clamp, Size 32 Hose	2
000-033-114	Clamp, Linkage	1
000-041-013	Cover, Handle Access	1
000-041-123	Cover, 1/2 Hp TEFC Motor	1
000-041-352	Cover, RX-20 Linkage Clamp - Painted	1
000-049-033	Filter,1/4” Inline Y	1
000-052-001	Fitting, Swivel, 2M- 2UFS	2
000-052-050	1/4” Male Quick Connector	1
000-052-059	Bushing,1/4” MPT X 1/8” FPT	2
000-052-071	Nipple,1/4 Brass Hex	1
000-052-072	Nipple,1/4 Brass Close	1
000-052-085	Elbow, 1/4” Brass Street	1
000-052-294	Rotary Union, Brass	1
000-056-009	Fuse, 6.3 Amp 5mm X 20	2
000-059-001	Gear Box Complete, RX-20	1
000-061-004	Handle, Foam Grip-Closed	2
000-061-030	Handle, RX-20 Clamp “T” (Raw)	2
000-061-119	Knob, Push Button	1
000-068-176	Hose, 3/16” X 45” Teflon	1
000-068-193	Hose, 2” Clear Vacuum	2.8 ft
000-081-102	Label, RX-20 220 V	1
000-091-016	Motor, 1/2 Hp TEFC-22	1
000-094-030-07	Nut, Adjusting, Linkage	1

Part Number	Description	Qty
000-103-012	Pin, 1/4 X 7/8” Clevis	2
000-105-008	Plate, Cast RX-20 Base	1
000-106-001	Plug, 1/8” Brass	1
000-106-014	Plug, RX-20 Gear Box Vent	1
000-106-026	Plug, 1” Cap	1
000-106-109	Plug, 220 V IEC w/Fuse Receptacle	1
000-107-096	Handle Arc RX-20	2
000-107-097	Link - RX-20	4
000-107-101	Plunger - RX-20	2
000-107-103	Trigger Pivot- RX-20	1
000-108-014	Shield, RX-20 Micro	1
000-131-014	Gasket, RX-20 Roto Shroud	3.2 ft
000-139-006	Ring, 5/8” Snap	2
000-141-004	Axle, Hi Speed RX-20 Wheel	1
000-141-007	Rod Assembly, RX-20 Handle Adj. Clamp	1
000-141-031	Rod, Handle Arc RX-20	1
000-156-031	1/4-20 X 1” S/S	1
000-157-132	Relay, 220 V 30 Amp SPST	1
000-157-133	Switch, 220 V	1
000-157-134	Switch, 220 V Momentary	1
000-167-009	Trigger, RX-20 Solution	1
000-167-010	Trigger, RX-20 Power	1
000-169-058	Valve, S/S HydraMaster	1
000-174-030	Washer, 5/8” I.D. X 7/8”	2
000-177-001	Wheel, 8” Hi Speed RX-20	2
000-178-054	Cord, 50’ w/M-F IEC Ends 220 V	1
604-051-019	Handle Assembly, 220 V	1
604-053-002	Dble.Thread Vac. Head	1

RX-20/CMX-20 - 220 V, Extended Handle Assembly Parts List (P/N 604-999-225)

Part Number	Description	Qty
000-006-009	Base, Hi Speed, RX-20	1
000-011-001	Bezel, Threaded	1
000-015-006	Bracket, Head Stabilizer	1
000-015-139	Bracket, Hi Speed RX-20 Handle	1
000-015-190	Bracket, RX-20 Relay Mount	1
000-015-552	Bracket, RX-20 Linkage	2
000-033-010	Clamp, Size 32 Hose	2
000-033-114	Clamp, Linkage	1
000-041-013	Cover, Handle Access	1
000-041-123	Cover, 1/2 Hp TEFC Motor	1
000-041-352	Cover, RX-20 Linkage Clamp - Painted	1
000-049-033	Filter,1/4” Inline Y	1
000-052-001	Fitting, Swivel, 2M- 2UFS	2
000-052-050	1/4” Male Quick Connector	1
000-052-059	Bushing,1/4” MPT X 1/8” FPT	2
000-052-071	Nipple,1/4 Brass Hex	1
000-052-072	Nipple,1/4 Brass Close	1
000-052-085	Elbow,1/4” Brass Stre	1
000-052-294	Rotary Union, Brass	1
000-056-009	Fuse, 6.3 Amp 5mm X 20	2
000-059-001	Gear Box Complete, RX-20	1
000-061-004	Handle, Foam Grip-Closed	2
000-061-030	Handle, RX-20 Clamp “T” (Raw)	2
000-061-119	Knob, Push Button	1
000-068-183	Hose, 3/16” X 51” Teflon	1
000-068-193	Hose, 2” Clear Vacuum	3.8 ft
000-081-102	Label, RX-20 220 V	1
000-091-016	Motor, 1/2 Hp TEFC-22	1
000-094-030-07	Nut, Adjusting, Linkage	1
000-103-012	Pin, 1/4 X 7/8” Clevis	2
000-105-008	Plate, Cast RX-20 Base	1

Part Number	Description	Qty
000-106-001	Plug, 1/8” Brass	1
000-106-014	Plug, RX-20 Gear Box Vent	1
000-106-026	Plug, 1” Cap	1
000-106-109	Plug, 220 V IEC w/Fuse Receptacle	1
000-107-096	Handle Arc RX-20	2
000-107-097	Link - RX-20	4
000-107-101	Plunger - RX-20	2
000-107-103	Trigger Pivot- RX-20	1
000-108-014	Shield, RX-20 Micro	1
000-131-014	Gasket, RX-20 Roto Shroud	3.2 ft
000-139-006	Ring, 5/8” Snap	2
000-141-004	Axle, Hi Speed RX-20 Wheel	1
000-141-008	Rod Assembly, Extend	1
000-141-031	Rod, Handle Arc RX-20	1
000-156-031	1/4-20 X 1” S/S	1
000-157-132	Relay, 220 V 30 Amp SPST	1
000-157-133	Switch, 220 V	1
000-157-134	Switch, 220 V Momentary	1
000-167-009	Trigger, RX-20 Solution	1
000-167-010	Trigger, RX-20 Power	1
000-169-058	Valve, S/S HydraMaster	1
000-174-030	Washer, 5/8” I.D. X 7/8”	2
000-177-001	Wheel, 8” Hi Speed RX-20	2
000-178-054	Cord, 50’ w/M-F IEC Ends 220 V	1
604-051-009	Handle Assembly, 220 V	1
604-053-002	Dble.Thread Vac. Head	1

RX-20 / CMX-20

9 - Repair and Replacement

FELT VACUUM SEAL

The felt vacuum seal plays an important part in the optimum performance of your RX-20 / CMX-20. If it is worn or unlubricated, it will not form a proper seal. Lack of a proper seal will impair the vacuuming capabilities of the unit and therefore leave behind more water in the carpet than is desirable.

To replace the vacuum seal:

1. First, remove the vacuum head assembly as previously described.
2. Using a pocket knife or similar tool, carefully pry the seal up and lift it out. If the seal appears worn or glazed so that it will not lubricate well, turn it over (see Figure 9-1). If that does not work, or if it is damaged, replace it with a new seal.

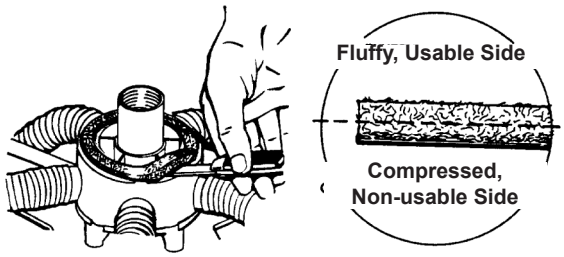


Figure 9-1. Carefully Pry Seal Up and Lift Out

3. HydraMaster recommends changing the felt seal after 10 hours of use. Replace it with a seal that has been pre-soaked in a quality 30 weight SAE motor oil .
4. Press the seal in place and saturate it with the motor oil. If a flattened seal will be re-used, place the used seal in an oil bath to rejuvenate it.

NOTICE

For the seal's oil bath, use a small receptacle the size and shape of a tuna fish can.

HIGH PRESSURE VALVE ASSEMBLY

In the event that the valve assembly needs to be replaced, follow this procedure:

1. Remove the 440 male quick connect with a wrench.
2. Remove the five hex head screws in the back plate on the handle and lift the back plate off.
3. Disconnect the stainless steel hose from the bottom of the valve assembly (see Figure 9-2).
4. Remove the bolt holding the trigger (see Figure 9-2).
5. Remove the two bolts holding the valve assembly in the handle (see Figure 9-2).
6. The valve may now be rebuilt or replaced.

CAUTION

If the valve has been frozen, inspect it for leakage before re-installing the back plate.

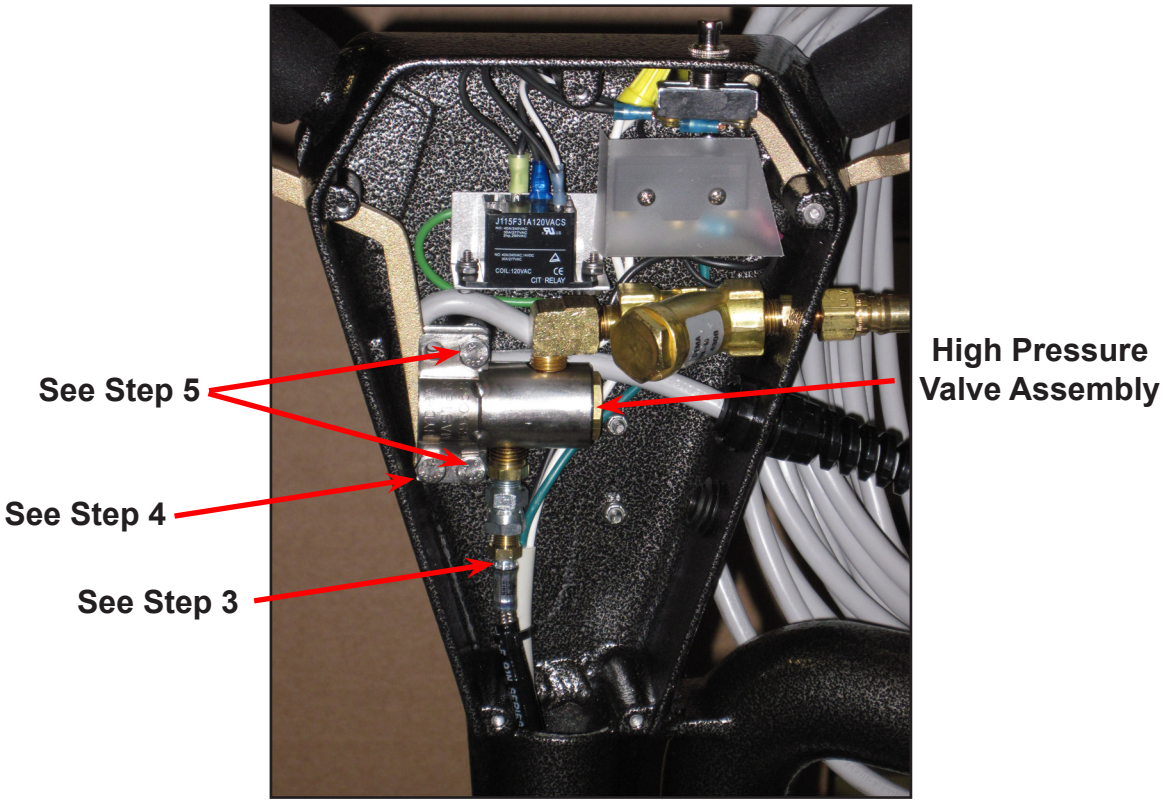


Figure 9-2. Quick Connect, Back Plate and Stainless Steel Hose Removed from Upper Handle Assembly

10 - Troubleshooting

1.0 Low Vacuum Flow at the Cleaning Heads

1.1 Hub not sealing properly.	Replace felt seal with a lubricated one.
1.2 Restricted air flow.	Remove hoses from the vacuum shoe and skid assembly, and clear them of debris.
1.3 Low vacuum flow from power.	Refer to Troubleshooting section of source equipment manual.

2.0 Low Water Flow at Cleaning Heads (indicated by irregular Water Temperature)

2.1 Restricted jets.	Remove jets and clear them of debris.
2.2 Clogged water strainer.	Remove water strainer and clean.
2.3 Kinked or clogged solution hose.	Remove hose. Repair or replace.
2.4 Cleaning hub not properly threaded.	Remove cleaning hub from shaft to shaft. Clean and rethread onto shaft.

3.0 Water Leak at Rotary Union

3.1 Foreign matter in rotary union seal.	Dismantle rotary union. Clean. Re-assemble and install.

4.0 Water Leak at Valve

4.1 Ruptured plunger or valve O-ring.	Repair or replace damaged plunger, O-ring, seal. Check for freeze damage.
4.2 Ruptured plunger or valve O-ring.	Repair or replace damaged plunger, O-ring, seal. Check for freeze damage.

5.0 Loss of Oil from Gearbox

5.1 Loose or ruptured oil seal.	Replace damaged oil seal. Refill gearbox with oil.

6.0 No Power

6.1 RX-20/ CMX-20 wiring or power source.	Have an electrician inspect unit for possible wiring or motor problems.
6.2 Overload power source.	Locate an unused power source.
6.3 Gearbox.	Repair or replace gearbox.

7.0 Head during Operation

7.1 One leg of star bent.	Straighten star.

RX-20 / CMX-20

11 - Warranty Information

HydraMaster warrants Rotary Extractor machines of its manufacture to be free from defects in material and workmanship if properly installed, maintained, and operated under normal conditions with competent supervision. No person, agent, representative or dealer is authorized to give any warranties on behalf of HydraMaster, nor to assume for HydraMaster any other liability in connection with any HydraMaster products. This warranty shall extend to the original purchaser of said equipment for the periods listed below from date of installation. If repairs or replacements are made by the Purchaser without HydraMaster's written consent, HydraMaster's warranty shall cease to be in effect.

Machinery, equipment and accessories furnished by HydraMaster, but manufactured by others, are warranted only to the extent of the original manufacturer's warranty to HydraMaster unless otherwise specified in the listing below.

HydraMaster agrees, at its option, to repair at the point of shipment, or to replace without charge, any parts or parts of products of HydraMaster's manufacture, which within the specified warranty period shall be proved to HydraMaster's satisfaction to have been defective when shipped, provided the purchaser promptly notifies HydraMaster, in writing, of such alleged defect. HydraMaster will pay all freight and transportation charges within the United States, via normal ground shipping means, for replacement of parts covered under this warranty.

This warranty covers parts, as specified, and does not cover labor which may be necessary in completing repairs. HydraMaster's liability to Purchaser, whether in contract or in tort arising out of warranties, representation, instructions, or defects from any cause shall be limited to repairing or replacing the defective part or parts. To qualify for warranty coverage, defective parts must be returned to HydraMaster within 30 days. No warranty liability whatsoever shall attach to HydraMaster unless and until HydraMaster has received payment in full for the warranted machine or part.

Except as stated in this section and in the proceeding section and except as to title, there are no guarantees or warranties of merchantability, fitness, performance or otherwise, express, implied or statutory, and HydraMaster shall have no liability for consequential, incidental or other damages howsoever caused.

All components not specifically referenced in the schedule below are covered under this warranty for a period of one (1) year, excepting those parts which are considered, by HydraMaster, to be expendable in normal use, including but not limited to paint, labels and other cosmetic parts or features.

RX-20 / CMX-20

Freeze-related damage of any RX-20 / CMX-20 component will VOID all warranties on water- or chemical-related components, internal or external.

Hard water deposits and buildup in the RX-20 / CMX-20 will VOID all warranties on affected components.

All recommended maintenance must be performed by competent service personnel.

Records of periodic maintenance must be kept and copies may be required to be furnished to HydraMaster before this warranty is honored.

Coverage Schedule

Frame, Handle, Body	3 years
Gear Box	1 year
Motor	1 year
Valves, Filters, Hoses	1 year